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## **ABSTRACT**

This study examines the domestic water supply and consumption in Ibadan north east local government area of Oyo state, Nigeria. Primary and Secondary data were used during the study. Primary data were gathered through the use of administered questionnaires. A

Structured questionnaire was used to solicit information from two hundred and forty (240) randomly selected households. This questionnaire was used to obtain information on type of water source, distance from household and water consumption pattern of the households and many more. While secondary data were gathered from National Population Commission for 2006 population. Data was also gotten from the local government secretariat. These secondary data were used in the research in order to get the accurate information about the study area.

Primary data collected were analysed using appropriate statistical package called SPSS (Statistical Package for Social Sciences) and chi-square of independence was used for the analysis. During the course of the study, some problems were detected and solutions and recommendations were given.

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## CHAPTER ONE

### INTRODUCTION

#### 1.1 BACKGROUND TO THE STUDY

Water is one of the world's most valuable resources. It is a basic necessity of life for both plants and animals. Mankind cannot, in fact, survive without water as even the human body is made up of about 70% water. Water resources are becoming increasingly scarce in many parts of the world due to development, increased demand, climate change and resulting drought and explosive population growth. The availability of a reliable and clean supply of water is one of the most important determinants of our health. WHO explains that diseases related to drinking-water contamination represent a major burden on human health and the interventions to improve the quality of drinking-water provide significant benefits to health.

Water is the only substance that exists naturally on Earth in all three physical states of matter, gas, liquid, and solid, and it is always on the move among them. The Earth has oceans of liquid water and Polar Regions covered by solid water. Energy from the sun is absorbed by liquid water in oceans, lakes, and rivers and gains enough energy for some of it to evaporate and enter the atmosphere as an invisible gas, water vapour. As the water vapour rises in the atmosphere it cools and condenses into tiny liquid droplets that scatter light and become visible as clouds. Under the proper conditions, these droplets further combine and become heavy enough to precipitate (fall out) as drops of liquid or, or if the air is cold enough, flakes of solid, thus returning to the surface of the Earth to continue this cycle of water between its condensed and vapour phases..

The **hydrologic cycle** is a conceptual model that describes the storage and movement of water between the biosphere, atmosphere, lithosphere, and the hydrosphere. Water on our planet can be stored in any one of the following major reservoirs: atmosphere, oceans, lakes, rivers, soils, glaciers, snowfields, and groundwater. Water moves from one reservoir to another by way of processes like evaporation, condensation, precipitation, deposition, runoff, infiltration, sublimation, transpiration, melting, and groundwater flow. The oceans supply most of the evaporated water found in the atmosphere. Of this evaporated water, only 91% of it is returned to the ocean basins by way of precipitation. The remaining 9% is transported to areas over land masses where climatological factors induce the formation of precipitation. The resulting imbalance between rates of evaporation and precipitation over land and ocean is corrected by runoff and groundwater

flow to the oceans.

Water resources are becoming increasingly scarce in many parts of the world due to development, increased demand, climate change and resulting drought and explosive population growth. The availability of a reliable and clean supply of water is one of the most important determinants of our health. Thus, water use (demand) is a function of availability (supply).

Water use falls into several major classes, each of which is associated with certain quantity and quality requirements. These classes include water for drinking and cooking, waste disposal, crop production, aquaculture, livestock, industrial use, recreational use, navigational use, and ecological values such as survival of natural lake, riverine or wetland communities. The quantity of water used within each of these classes is influenced mainly by variables such as climate and precipitation. The proportion of total water used for any specific purpose is controlled by socioeconomic conditions, tradition, culture and water availability. Agriculture based economies, such as Nigeria's, shall require up to 80% of available water for agriculture, and 10% each for industrial and domestic purposes.

In an urban setting, the water used to generate electricity may be used for irrigation down a river. The same water might be used yet again as it is withdrawn for a public water supply or an industry. Only a few uses actually consume water. Irrigated agriculture, for example, consumes 55% of the water it uses. The consumptive nature of irrigation, therefore, limits many simultaneous users of the same resource. Municipal facilities such as cities consume 21% of water they withdraw. In contrast, industry which withdraws very large quantities of water, consumes only about 3% of that water. Although the quality of water returned to the system may change. Unless unacceptable changes in quality occur, many industrial users could benefit from the same water resource. The human needs about 2-10 litres of water per day for normal physiological functions, depending on climate and workload. About 1 litre of water is provided by daily food consumption. The total water consumption per capita per day is determined by a number of factors, such as availability, quality, cost, income, size of family, cultural habits, standard of living, ways and means of water distribution and climate (World Bank Water Research Team, 1993).

Water supply system is the collection, transmission, treatment, storage, and distribution of water for homes, commercial establishments, industry, and irrigation, as well as for such public needs as fire fighting and street flushing. Of all municipal services, provision of potable water is perhaps the most vital. People depend on water for drinking, cooking, washing, carrying away wastes, and other domestic needs. Water supply systems must also meet requirements for public, commercial, and industrial activities. In all cases, the water must fulfil both quality and quantity requirements. Water was an important factor in the location of the earliest settled communities, and the evolution of public water supply systems is tied directly to the growth of cities. In the development of water resources beyond their natural condition in rivers, lakes, and springs, the digging of shallow wells was probably the earliest innovation. As the need for water increased and tools were developed, wells were made deeper. Brick-lined wells were built by city dwellers in the Indus River basin as early as 2500 BCE, and wells almost 500 metres (more than 1,600 feet) deep are known to have been used in ancient China.

Public water supply started in Nigeria early in the twentieth century in a few towns managed at the lowest administrative level. Amongst the early beneficiaries were Lagos, Calabar, Kano, Ibadan, Abeokuta, Ijebu Ode (Ogun State) and Enugu. The schemes were maintained with revenue from water sales with virtually no operational subvention from government. With the creation of regional governments in the early 1950s the

financial and technical responsibilities for developing new water schemes were taken over by the regional governments who also assigned supervisory high level manpower to oversee operations and maintenance. The regions were slow to set up independent bodies to develop, operate and manage the water supply. The first water corporation was formed in the western region in 1966 which took over all the assets and liabilities, including the existing staff. The staffs of the Water Division of the Ministry of Works were also transferred to the new corporation. The next corporations were formed in the 1970s. Today, all 36 states and the Federal Capital Territory have water boards/corporations or public utilities boards managing their public water supply. Their efforts are supplemented, in many cases, by local governments who supply water to small villages in their areas of jurisdiction.

## **1.2 AIM AND OBJECTIVES**

The aim of the study is to examine the domestic water supply and consumption in Ibadan north-east local government area. The specific objectives are to:

1. Determine the quantity of water used in different household
2. Access the challenges facing water supply for residents in the area and proffer solution.
3. Examine the relationship between socio-economic characteristics and pattern of water consumption in the area

## **1.3 RESEARCH HYPOTHESES**

There is no significant relationship between household size and quantity of water consumed.

There is no significant relationship between income and quantity of water consumed

3. There is no significant relationship between distance to water source and the amount of water consumed.

## **1.4 SIGNIFICANCE OF STUDY**

It has been estimated that about 80 % of all the diseases in the developing countries are related to unsafe water supply and inadequate sanitation. Lack of access to improved sanitation and safe water supply is a global crisis. The effects of inadequate water supply are more visible and prevalent in Sub-Saharan Africa. The fast growth of the study area has contributed to the high demand of water supply and consumption within it. A lot of residents are dependent on boreholes and wells for their water supply. This study will examine the domestic water supply and consumption in Ibadan north east local government and the problems and solutions of water supply for the people of the area.

## **1.5 SOURCES OF DATA**

There are two basic sources of data, the primary source and the secondary source. This research depended mainly on the primary source of data. This was done through the administration of questionnaire.

### **1.5.1 PRIMARY SOURCE**

The primary source will be obtained from the distribution of questionnaires to the various respondents within the community. The questionnaire instrument of which will include multi choice question that will be administered to random household across the different wards in the local government. This study applied a cross sectional survey research design and the use of a structured open ended and close ended is used for data collection. This study was conducted among the dwellers in Ibadan north east local government and basically among household heads of different households in the community. A total number of 240 questionnaires were administered in Ibadan north east local government area. All the questionnaires were

purposively administered amongst twenty (20) households drawn from each ward. Ibadan north east local government has a total of twelve (12) wards and all the wards have an equal questionnaire of twenty (20) each. The questionnaire is divided into 2 main sections. The first section which deals with the socio-economic characteristics of the respondent which include questions like Age, sex, religion, marital status, household size, occupation, monthly income etc. The second section deals with questions on water supply and consumption pattern in their various households. Questions which include their major source of household water supply, distance to the source of water, quality of water used in the household and other relevant questions pertinent to the study. The interviews were administered among the dwellers that showed interest. No incentive was offered to the participant.

**1.5.2 SECONDARY DATA**

Data from secondary source was obtained from journals and data from previous researches. Other sources of information were from test materials, archives, past projects and literature, article related to the study. Secondary data was also collected from local government secretariat, which will be used in the research in order to get the accurate information about the study area.

**1.6 METHOD OF DATA ANALYSIS**

The use of both descriptive and chi-square method of data analysis were applied for the analysis of the data. For the purpose of making comparison among the variables (i.e, socio-economic characteristics, age, sex, occupation etc), descriptive statistics were used in the analysis. These are used to summarize bulky data for easy understanding. Among these are, the simple frequencies and percentages, mean, and standard deviation etc. the results generated from the analysis are presented in tables and figures to discuss the data and information on various issues addressed by the research objectives. Chi square a statistical test which was used to establish the dependency of a factor on another factor with the aim of determining if there is a significant relationship between the tested factors was used to test for hypothesis..

**1.7 STUDY AREA**

The Ibadan north east local government was created on the 27th August 1991 by an administration of former head of state General Ibrahim Badamosi Babaginda. It was carved out of the defunct Ibadan Municipal government and derived its name from the metropolitan nature of the area it covered then (12 km radius with Mapo as the centre)

The local government has its administrative headquarters located along the two-road axis of Ibadan, a major entry point through Ife/Ibadan expressway end of Oyo state capital. The inhabitants of the local government are predominantly Yoruba, although it is highly heterogeneous, accommodating people from various other tribes who either engage in commercial activity or work in the public service.

The local government is heavily populated and covers a large expanse of land with an area of about 12.5 square kilometers. It is bounded on the east by Egbeda and Ona ara local Governments, on the west by Ibadan North local government and with, Ibadan South east local government on the south. The population is said to be 330,399 as at the 2006 census.

It comprises twelve (12) wards. Each ward is represented by a councillor at the legislative council. The 12 wards cover the under listed areas.

**Table 1.1: Wards in Ibadan North East Local Government**

WARD	AREA
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Ward 1	Odo Osun, Labiran
Ward 2	Ogbori efon, Ita Baale, Oranyan and Beyerunka
Ward 3	Kosodo, Labo, Alafara
Ward 4	Adekile, Aremo, Orita Aperin
Ward 5	Labiran Aderogba, Beyerunka
Ward 6	Oje Aderogba, Alafara
Ward 7	Oke Offa, Atipe, Oja Igbo, Aremo Alafara, Ajegede
Ward 8	Ode Aje, Padi, Alase Aremo Ajibola
Ward 9	Koloko, Agugu, Oke Ibadan, Idi obi
Ward 10	Oje Irefin, Ita Akinloye, Baba sale and Padi
Ward 11	Iwo Road, Abayomi, Basorun, Idi Ape BCOS Quarters
Ward 12	Part of Irefin, Agodi Gate, Oluyoro, Gbenla, Oke Adu, Aromolaran, Onipepeye

**Source: Ibadan north east local government secretariat, 2015**

### **Fig 1: Map of Ibadan metropolis showing the study area**

The populace consist of civil servants, teachers, traders and artisans. The main business activity in the Local Government area is buying and selling of different types of goods ranging from household needs, foodstuff, building/electronic materials.

Most of the markets of historical and commercial significance in Oyo State are located within the Local Government. Among such markets are: Oje market, Oranyan market, Agodi gate spare parts market. Also building materials of all kinds are readily available in the popular Iwo road axis, one of the greatest commercial centres in Ibadan where no fewer than sixteen (16) banks are located. There are also ultra-modern shopping complexes owned by private individuals and the Local Government.

Investment opportunities abound in the Local Government because of its metropolitan nature. It has facilities such as electricity, portable water, good and accessible roads and banks. Business enterprises such as sales of automobiles spare parts, building and electrical materials, insurance, hotel and hospitality services, pharmacy stores, agricultural firms and supermarkets abound within the Local Government Area. Also there are various vocations like motor mechanic, carpentry, fashion designing, hair dressing, barbing and plumbing amongst others. These vocations are profitable and provide the basic needs of the people due to the concentration of middle class people in the Local Government.

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