

## **IMPACT OF DOMESTIC WATER PROVISION ON WOMEN IN THEIR EDUCATIONAL ATTAINMENT: A CASE OF IWO, NIGERIA**

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### **ABSTRACT**

*The significance of female composition in ensuring water availability in African homes cannot be overestimated as women are by tradition believed to be solely responsible for it. Thus, women and their girls often travel out of their places of abode to ensure the fulfillment of this responsibility. A study was conducted to investigate on the implications of female gender responsibility for water availability in African homes especially on their educational attainment with Iwo in Nigeria as a case study. The study employed the use of questionnaire survey, interviews and focus groups to generate data for this purpose. Two hundred and fifty (250) households were randomly selected in the town for the purpose of the survey out of which 239 (95.6%) were retrieved. Both descriptive and inferential statistics were used in the analysis. The results of the descriptive analysis revealed that 74.2% both female and male gender submitted to the belief that women in African homes are responsible for the provision of water and that the search for water gulp appreciable women economic hours as 58.5% spent over 30 minutes to get water for home use. Also, the survey showed that the trouble of water fetching has untold hardship on the education attainments as appreciable economic hours are spent daily in search of water for home use rather than attending to education matters. Factor Analysis extracted 9 factors which explained 72.36% of how water supply responsibility has contributed to educational attainment of women. Household size (14.59%) and indecision on the home chores (9.87%) are the two topmost factors. The results implied that educational attainment of women is hindered partly due to water-associated burdens and concerns. The study therefore recommends that relevant stakeholders in water management policies need to rise up to the challenge of timely water accessibility and home connections to functioning pipe-borne water networks to minimize the hours spent in water fetching so that more time can be available for education purpose.*

**Key Words:** *Water security, Women, African home, Culture, Water accessibility, Nigeria*

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## **1. INTRODUCTION**

Household accessibility to potable water is a necessity towards the sustenance of human livelihood. Water remains a resource that cannot be substituted. Its use by man in its varied areas such as for domestic, agriculture and industrial processes cannot be overlooked (Vandas and Winter, 2002; van der Zaag and Savenije, 2006; Ogunbode and Ifabiyi, 2014; Hossain, 2015). The need of clean water in homes is required for the purposes of drinking, cooking, bathing, washing and even disease prevention like COVID-19. However, accessibility to potable water has been a major concern of the entire world, thus it formed one of the listed goals in Millennium Development Goals (MDGs) which terminated in 2015. At the end of MDGs, it was reported that a remarkable achievement was attained as about 90% of the global citizens had good access to clean water for his use. It is worthy noted that despite the global achievement in this area, there are variations among nations especially in the developing countries. For instance accessibility to water in Nigeria at the end of the pursuit in 2015 was on 69% and even, household connections to pipe-borne water network declined to almost zero at the end of the period. Similar scenario was equally found among other developing nations such as Togo, Turkey, Mauritania (WHO & UNICEF, 2017). These disparities could be attributed to various factors. For instance, household accessibility to potable water in Africa is highly influenced by many factors such as income level, nearness to the source point, family size, educational level and female gender composition among others (Dagneu, 2012; Ogunbode and Ifabiyi, 2017). The significance of female composition in ensuring water availability in African homes cannot be overestimated as women are culturally believed to be solely responsible for it. (Aureli and Brelet, 2004; Interagency Network on Women and Gender Equality(INWGE), 2005; Maphosa, 2010; Boateng et al., 2013, Graham et al., 2016; Khandker et al., 2020). In African homes, it is increasingly becoming accepted that women play important role in water management. Graham et al., (2016) revealed that an estimated of 3.36 million children and 13.54 million adult females were responsible for water collection in households with collection times greater than 30 minutes in sub-Saharan Countries. Women, in African context, are often seen as a necessity in the family which should be available in other to sustain homes in terms of child bearing, food provision, cleaning of homes and its environment, other domestic chores like cloth washing among others (Awung and Dorasamy, 2015). Thus, it is not surprising that women statuses have always been at enormous variance with that of their male counterparts in African homes. The composition of female gender in homes has been found to contribute immensely to the availability of clean water in respective homes. Ifabiyi (2011) reported that water provision in

homes in Nigeria is the sole responsibility of women and their children, especially girls, most of whom are of school age. In addition, Awung and Dorasamy (2015) buttressed that the struggle of women generally has always been to deal with the competing demands of work and home life. Thus, it was discovered that in order to fulfill this domestic responsibility, women could travel kilometers in the forest, especially in the rural areas while their urban counterparts made efforts to trek from one place to the other in search of water. In the light of the stress of searching for water, women generally often find it difficult to cope with their male counterpart in the areas of health condition, social interaction, education attainment and even economic status (Awung and Dorasamy, 2015; Khandker et al., 2020)), though there may be some disparities among women living in rural areas and urban centres. According to Pozamy (2016), urban women have fairly good access to social infrastructure than their counterpart in the rural communities. In the light of the above, this work investigated into the impact of the burden of water availability on women; assess the determinants of potable water availability in African homes and evaluate the impact of water supply responsibility of female education attainment.

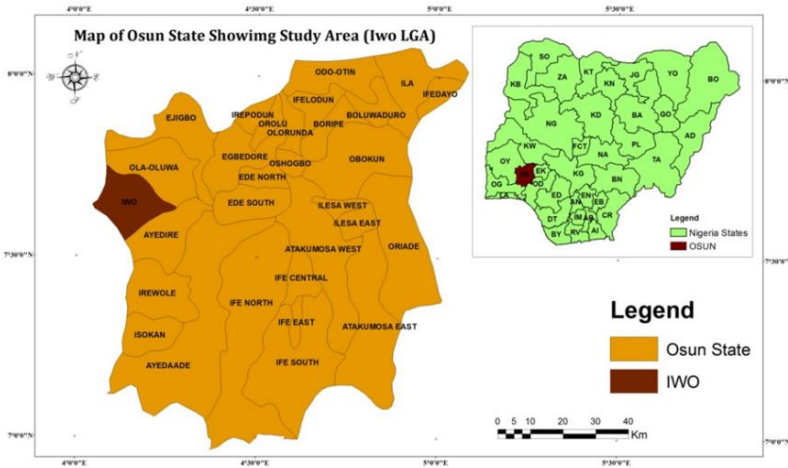
## **2. METHODOLOGY**

### **2.1. Study area**

This research was carried out in Iwo Township (Figure 1). Iwo is in Osun State in the southwestern Nigeria It has an area of 245km<sup>2</sup> with a population of 191,348 according to 2006 population census. It is located on the coordinate axis of 7<sup>o</sup>38'N and 4<sup>o</sup>11'E. The prevailing climatic condition is tropical with about eight months of rainfall (March to October) and about four months of dry season (November to February). Ogunbode (2015) discovered that annual rainfall in most tropical wet climate regions ranges between 1000mm and 2000mm with double maxima in July and September. Iwo habitants are predominantly farmers with high dependence on rainfall for agricultural practices. Apart from this the dominant vegetation is tropical forest comprising hardwoods such as obeche, walnuts, acacia, eucalyptus among others. In addition, the dominant agricultural practice is growing of permanent and annual crops such as cocoa, kolanut, oil palm, yam, maize and so on. However, the dry period in the year is often dominated with farming in the wetlands and along some river banks. Aiba Water Reservoir located within Government Forest Reservation Area in Iwo forms one of the sources of potable water for home use in the area. However, as a result of unreliable and erratic supply from this Water Works and, in view of the susceptibility of the

surface to pollutants, inhabitants have resorted to the exploitation of subsurface sources.

**Figure no. 1**



Iwo is underlain by Precambrian Basement Complex comprising mostly gneiss, granite, schist, undifferentiated met-sediment rocks and overburden that are comprised mainly of clay, sand and silt soils. These compositions are neither porous nor permeable except where they are deeply weathered or along the lines of weakness. Also, Iwo is drained by rivers such as Ogunpa River among others.

## 2.2. Data collection

The data required for this study is from primary source. Two hundred and fifty homes were randomly selected in Iwo and Olupona for the purpose of questionnaire administration. Respondents were selected from both the core urban centres and the suburbs of the town. Adult female-headed homes in the selected homes were interviewed. However, being a partly Muslim-dominated community, the investigation did not consider homes headed by women kept in purdah. Also, where the female head is not available, any other grown-up female in the house was interviewed. The questionnaire was conducted for both females and males were jointly administered. At the end of the survey, a focus group made up of ten (10) adult women and five (5) men were selected for interaction on the subject of the research to validate or otherwise of the report of the survey.

### **2.3. Data analysis**

Coding of information were carried out for the analysis. MS-Excell was used in this regard. Descriptive statistics such as tabulation, measure of central tendency and percentages were used. Multivariate analysis such as factor analysis was used to determine the explanation for women burdens in water supply palaver and its impact on their educational attainment.

## **3. RESULTS AND DISCUSSIONS**

### **3.1. Characteristics of the respondents**

#### **3.1.1. Level of Education**

The respondents are made up of people of different levels of education as shown in Table 1:

**Table 1: Respondents' Level of Education**

<b>S/No</b>	<b>Level Education</b>	<b>No in category (%)</b>
1.	No formal education	16 (5.3)
2.	Primary	102 (33.6)
3.	Secondary	143 (47.0)
4.	Tertiary	43 (14.1)

The distribution of respondents' levels of education is shown in Table 1. Forty-seven (47%) of the respondents are of secondary level while 33.6% have primary education. Also, 14.1% have tertiary education and 0.7% are of 0.7% have no formal education. The distribution reflects the challenge of education attainment among female gender which formed the 100% of the respondents. Preference is often given to male children education pursuits against female gender counterpart who are often considered for informal education and or early marriages. This was corroborated by the findings of Awung and Dorasamy (2015) and, Cerrato and Cifre (2018).

#### **3.1.2. Age composition of the respondents**

Table 2 shows the age categories of the respondents.

**Table 2: Age category of the respondents**

<b>S/No</b>	<b>Respondents' Age Category</b>	<b>No in category (%)</b>
1.	≤18years	02 (0.7)
2.	19-45years	209 (68.8)
3.	46-65years	81 (26.6)
4.	>65years	12 (3.9)

Table 2 reveals the age categories of the respondents. The distribution shows that the bulk of the respondents (99.3%) are above 18 years. The survey was deliberate on focusing the adult female gender and those that are already

married to achieve the objective of the study. The 0.7% that falls within the age category of Less than 18years ( $\leq 18$ years) were those that the survey considered when adult woman could not be obtained. However, such category consists of married women who can give information about their respective households.

### 3.1.3. Monthly income of the respondents

The respondents' monthly income distribution is shown in Table 3.

**Table 3: Monthly income of the respondents**

S/No	Respondents' monthly income Category (in Naira)	No in category (%)
1.	<10,000.00	34 (11.2)
2.	10,000-25,000	66 (21.7)
3.	26,000-40,000	88 (28.9)
4.	41,000-55,000	72 (23.7)
5.	>55,000.00	44 (14.5)

Table 3 shows the distribution of monthly income of the respondents. The Table shows that 14.5% earned income  $\geq 55,000$  Naira monthly while 23.7% earned between 41,000 and 55,000 Naira per month. Generally, 85.5% of the respondents earned less than 55,000 Naira monthly showing that female are economically weak in the study area. Thus, women in the study area may have to depend on the male head, who could be their husbands for their respective capacities building. Enfield (2019) also affirmed the gap between male and female genders in economic status.

### 3.1.4. Respondents' religious affiliations

Table 4 presents the religious affiliations of the respondents

**Table 4: Religious affiliation distribution of the respondents**

S/No	Respondents' Religious Affiliation Category	No in category (%)
1.	Christianity	98 (32.3)
2.	Islam	204 (67.1)
3.	Traditionalist	01 (0.03)
4.	No Religion	01 (0.03)

Table 4 shows the religious affiliations of the respondents. The Muslims form the majority of the people involved in the survey with 67.1% while Christians form 32.3% of the respondents. The study area is one of the Muslim-dominating settlements in the southwestern parts of Nigeria. Thus, the distribution reflects the religious characteristics of the community. Other

religions in the town is traditional worshippers which also form 0.03% of the respondent. Religious affiliation influences on the role of women in African homes. For instance, women kept in purdah in Islam are often available for different home chores than their counterpart in Christianity. This was corroborated by the findings of Enfield (2019) and Adeyemi et al (2016).

### **3.1.5. Respondents’ household size distribution**

The respondents’ household size distribution is revealed in Table 5

**Table 5: Respondents’ Household Size Distribution**

<b>S/No</b>	<b>Respondents’ household size Categories</b>	<b>No in category (%)</b>
1.	<5	37 (12.2)
2.	6-10	144 (47.4)
3	11-15	59 (19.4)
4.	16-20	47 (15.5)
5.	>20	17 (5.5)

Table 5 shows the households’ size distribution. The result Table revealed that household with a size of  $\leq 5$  among the respondents is 12.2% while those with between 6 and 10 members is 47.4% and 19.4% has between 11-15 members. Also, a proportion of 15.5% has between 15 and 20 members in it whereas the least proportion of 5.5% have >20 members. Household size has its influence on the volume of water usage which female gender needs to cater for. Adepoju et al., (2015) and Osinuga et al., (2021) had also reported that women’s domestic responsibilities are partly influenced by the size of the family, thus affirming the finding here.

### **3.1.6. Respondents’ marital status**

The marital status of the respondents is presented in Table 6

**Table 6: Respondents’ marital status**

<b>S/No</b>	<b>Respondents’ Marital Status Category</b>	<b>No in category (%)</b>
1.	Married	274 (90.13)
2.	Widow	23 (7.57)
3.	Separate	04 (1.32)
4.	Divorced	03 (0.98)

Table 6 shows the marital status of the respondents involved in the survey. The distribution reveals that the married women formed the bulk of the respondents with a proportion of 90.13%. the rest categories such as widows, separate and divorced are less than 10% of the total. The survey deliberately

focused on women rather than young females because women are responsible for home making activities.

### 3.1.7. Respondents' source/s of water for home use

**Table 7: Respondents' Source/s of water for home use**

S/No	Respondents' all-time source/s of water	No in category (%)
1.	Hand-dug Well/borehole	283 (93.09)
2.	Pipe-borne water	17 (5.59)
3.	River/Stream	04 (1.32)

The survey also examined the source/s of water for home use in the study area. Table 7 shows that 93.09% of the total respondents in the survey obtain their water from ground sources which are reached through hand-dug wells and boreholes while 5.59% claimed to get water from pipe-borne water source while 1.32% relied on surface sources such as streams and rivers. However, those that claimed surface sources only make use of streams and rivers for car wash but not directly for home consumption and that the use of the surface water is borne out of its closeness to their homes. Users of pipe-borne facilities were noted to be limited to those homes that are in the vicinity of the Aiba Water Works (AWWs). This observation affirmed the report of Ogunbode and Ifabiyi (2014) which discovered that groundwater forms the major sources of water for domestic uses in Iwo, Nigeria. Most homes depend on groundwater sources as many of the water works have either been technically neglected or underfunded in favour of groundwater development.

### 3.1.8. Time taken the respondents to fetch water

**Table 8: Respondents' time taken to fetch water**

S/No	Respondents' time taken to trek to fetch water	No in category (%)
1.	<10minutes	75 (24.7)
2.	10-20minutes	51 (16.8)
3.	21-30minutes	73 (24.0)
4.	>30minutes	105 (34.5)

Table 8 presents the distribution of time taken to fetch water for home use among the respondents. The Table shows that 65.5% spend maximum of 30minutes to obtain water for their respective home use which incidentally is agreement with the recommendation of the United Nations. However, the remaining 34.5% spend  $\geq 30$ minutes to obtain water for their home use. This



implies that water accessibility is still a challenge to many people despite the efforts of the United Nations through its Millennium Development Goals which lapsed in 2015. The poor accessibility could be as a result of poor yields of the ground sources, power failure and dilapidated structures which requires the attention of relevant stakeholders. This is supported by the findings of Solihu and Bilewu (2021)

**3.1.9. Respondents’ view on home water provision responsibility**

**Table 9: Respondents’ view on home water provision responsibility**

S/No	Gender	No in category (%)
1.	Male and Female	35(11.5%)
2.	Male only	41(13.5%)
3.	Female only	228(75%)
4.	Total	304(100%)

Table 9 reveals that the views of the respondents differ on who takes the responsibility of providing water for home use. While thirty-five (11.5%) respondents were of the view that such responsibility should be borne by both male and female gender, forty-one (13.5%) stated that the responsibility of domestic water provision is for male gender. This view could be traced to the view of the women who are kept in purdah (female seclusion) as practiced in Muslim religion (Pastner, 1974; Assadular and Wahhaj, 2016; Devi and Kaur, 2019). Such women do not get engaged in labour force but rather remain in door or move while in purdah. However, the view that it is males’ responsibility could be traced to those respondents who could be apostles of gender equality especially among the elites and higher education levels. The third view on home water provision responsibility is the belief that it is the sole responsibility of female gender alone by African culture as also corroborated by Ifabiyi et al., (2010).

**4. RESULTS OF FACTOR ANALYSIS**

**4.1. Details of the factors extracted**

Bartlett’s and Kaiser-Meyer-Olkin (KMO) and test showed that the data is factorable at 95% confidence level and 0.863 respectively

Factor analysis extracted nine (9) factors that contribute to the explanation of how water supply responsibility has contributed to educational attainment of women in the study area. The extracted factors contributed 72.358% to the explanation. These factors are as follow:

**Table 10: The summarized results of factor analysis of the data**

S No.	Factor	*Eigen Value	**Component Loading	*% Variation	*% Cumulative Variation
1.	Household Size	3.064	78.7	14.589	14.589
2.	Indecision on Schooling or Water provision	2.073	60.4	9.869	24.458
3.	Female belief and assertion	1.957	60.3	9.317	33.775
4.	Proportion of Children of school age	1.723	59.3	8.206	41.981
5.	Time taken to take 25litres of water	1.617	59.1	7.701	49.682
6.	Time to reach water source/s	1.374	51.8	6.544	56.226
7.	Marital Status and water provision responsibility	1.198	50.0	5.710	61.936
8.	All time source/s of water	1.114	56.4	5.305	67.240
9.	Water Conservation Method	1.075	44.8	5.118	72.358

Source: \*Culled from SPSS Table of Variation Explained; \*\*Culled from Component Matrix Table

#### 4.1.1. Household size

The results as shown in Table 9 revealed that Household size contributed 14.589% (with eigen value of 3.064) to the explanation of the impact of water provision responsibility of female gender to the level of education of the women. It has been established that the bigger is a household, the more is the water they consume (Ogunbode and Ifabiyi (2017). The study area is majorly dominated by Islamists, the religion that permits polygamist, i.e. a man to more than one wife as reported by Alamgir (2014). This feature could establish that the household size will be bigger than places dominated by Christians. The implication of this situation is that more water is required in each of the households for various domestic uses at any point in time which makes female's task heavier to cater for. Thus, the time that should have been spent to attend to their education are rather spent on catering for water need of their respective homes. Levison et al. (2017) discovered that there is positive correlation between school enrolments for female gender and the responsibility for home chores including water supply in Tanzania. Similar results was discovered in Ethiopia by Geru and Bezu (2014).

#### **4.1.2. The dilemma on what to attend to in the house**

Another factor that was extracted to the explanation of how water supply responsibility of female gender has contributed to their level of education as revealed in Table 9, is the dilemma of taken decision on which one to attend to whether to attend to school or to go searching for water. This factor contributes 9.87% to the explanation with eigen value of 2.073. When a man finds herself in the situation of which decision to take, then, each task at hand may be haphazardly attend to. Thus, with this result, it shows that female gender is often in a situation of indecision whenever the issue of water provision comes up in lieu of going to school. Most females may eventually prefer to attend to water provision since, even if she attends to schooling, she will come back to the challenge of water provision responsibility. Thus, school matters are usually jeopardized each time water matters come in many households. The views of Dida et al. (2014) and Okpechi et al. (2016) corroborated this observation.

#### **4.1.3. Claim that water provision task impact on the female level of education**

Factor analysis results as shown in Table 9 revealed the claim of the respondents that the task of searching for water for home use impacted on their level of education. This component contributed 9.317% to the explanation for the impact of water supply palaver on their educational attainment. Generally, and traditionally, homes in the southwestern part of Nigeria, which is dominated by Yoruba tribe believe that most home chores, including water provision, are the responsibilities of female gender in homes. Yoruba culture believes that male gender are not observed fetching water, except such a man is a lazy type. Though, education has impacted on elimination of this belief, it is still seen among non-elites and rural dwellers. This finding is in support of Gebre et al. (2016)

#### **4.1.4. Number of male children of school age**

The results of the analysis as presented in Table 9 showed that the number of children of school age in each household surveyed. It offered 8.206% of the total percentage that explained the contribution to how water provision challenge has contributed to the educational attainment of the female gender of the respondents. It has eigen value of 1.723. Most home heads believe that male gender should be given adequate attention than their female counterpart, even in giving them formal education. It is believed that females will be married off, and so might not be beneficial to the family on long run. Thus, female educational attainment could be jeopardized where the

number of females are more than that of male. It is also believed that male gender must always be accorded respect in homes, even when the woman is worth to be his mother. Muchimuti and Hart (2015) revealed that access to water only impacted on male gender education than to females' in Uganda and the Kegara Region of Tanzania. Thus, the proportion of household male composition rather increases female burdens of home water supply.

#### **4.1.5. Time taken to fetch exact container capacity of water**

The time taken to fetch exact container capacity of water was also extracted as one of the factors that contributed to how water supply task has contributed to the educational attainment of female gender in the study area shown in Table 9. This factor offered 7.701% to the explanation with the eigen value of 1.617 and component loading of 59.1 percent. The time taken to fetch 25litres of water indicates the enormous stress that female gender passes through in terms of both vertical and horizontal distances. Firstly, horizontal distance implies the distance to be covered to reach water source and back to the point of use while vertical distance is the time taken to draw water from the well, most of which are of enormous depth in the study area. Thus, quite a lot of economic time is expended searching for water for home use at the expense of attending school. Cassivi et al., (2018) and Ngarava et al., (2019) noted that for most countries in Africa, the threshold of 30minutes to reach and fetch water for home use is well exceeded. This has a serious consequence on female gender who are mostly involved in water supply because women have to spend good quality time to get adequate water in several trips on daily basis with their containers of average capacity of between 15 and 20 litres. The findings of Adejumo (2020) also corroborated this result where it was discovered that residents of Ibadan in Nigeria have access below the recommended 25 litres per person per day indicating water insecurity in the metropolis of water.

#### **4.1.6. Time taken to trek to water points**

The results as presented in Table 9 revealed that the time taken to reach water source/s contributed 6.544% to the explanation of how water supply for home use responsibility has contributed to the educational attainment of female gender in the study area. The factor has eigen value of 1.374 and component loading of 57.8. The major source of water for home use in the study area is groundwater which are exploited through digging and/or drilling. Most wells in the Iwo are often at their lowest yield during the dry season while they are at their peaks during the raining season. In the light of their poor yields, females have to trek long distances to obtain water. Apart

from the long distance, most of these wells are deep and so it takes enormous time to reach for water winching. In the rainy season when water is expected to be more accessible, they are often contaminated by seepage. The findings of Ogunbode and Ifabiyi (2014), Olajuyigbe (2010) and Cassivi et al., (2028) supported this finding which also discovered the power of time taken to reach water points in determining water access.

#### **4.1.7. Marital status**

Table 9 revealed that marital status of women contributed to how household water supply has impacted on the educational attainment of female gender in Iwo town. It contributes 5.710% to the explanation with the eigen value of 1.199 and component loading of 51.0. One major role of women in homes is home management apart from procreation, which includes water provision for home use. Thus, any married lady and possibly, her children, are expected to take charge of this responsibility with diligence. Since home chores are mostly borne by mothers in African homes, it becomes imperative that provision of water for these varied purposes is not negotiable if such a woman will be able to sustain her marriage. Fleifel et al., (2019) and Graham et al., (2016) in supporting this discovery noted that water supply responsibilities of women in the sub-Saharan Africa have exposed mothers and their girl-children to various hazards including female disempowerment, increased drop-out-of-school among female gender, early marriage among others, thus recommending improvement on water-related policies, especially towards enhancing household connections to improved water sources.

#### **4.1.8. All time source/s of water**

Table 9 revealed that the presence of uninterrupted source/s of water could explain the attainment in education of female gender. When there is readily source of water to fetch from for women, it would be an avenue to save time for other things that could better their lives. All time source/s of water offered 5.305% to the explanation on how water supply palaver impacted on female educational attainment with eigen value of 1.114 and component loading of 56.4. United nations (UN) had recommended that water source is accessible if it can be reached within a maximum of 30 minutes (WHO and UNICEF, 2017). The findings of Olajuyigbe (2010) and Cassivi et al., (2028) corroborated this finding that women and their children often have to trek distances in search for water almost on daily basis, the finding that indicates inaccessibility to potable water as recommended.

#### **4.1.9 Method of conserving water**

Table 9 also revealed that the method by which water is conserved in the area was also extracted by factor analysis. This factor explained 5.118% of the factors that contributed to how domestic water provision of female gender has influenced their respective educational attainment with eigen value of 1.075 and component loading of 44.5. The method of conserving water in the study area is mainly with the use of clay pots, plastic and steel drums, buckets of different sizes while overhead tank is limited to few people that could afford it. Thus, water conserved in these items do not last more than 2 days most often. The reason for this scenario could be attributed to the level of poverty. Thus, women are constantly and regularly bearing the stress of water provision for their respective home's uses. Mashall (2011) and Misra (2014) in supporting this observation also recognized the challenges posed by inadequate facilities for water conservation towards water accessibility.

### **5. CONCLUSION AND RECOMMENDATION**

Consequences of domestic water supply responsibility on female gender in African homes have been investigated with Iwo, Nigeria as a case study. Descriptive analysis results revealed that African cultural belief, distance to water sources, lack of facilities for water conservation have impact on home water provision by female gender and so, impacted on women educational attainment because the former must be taken as a priority in lieu of any other livelihood means. Factor analysis also showed that nine factors are important in explaining how the burden of water supply for domestic purposes have impinged on women educational attainment. The topmost of the nine factors extracted is household size (14.59%) indicating that the larger the size of the family the likelihood is the higher the burden of home water supply borne by the women. Hence less or no time for other activities such educational pursuits for the women. The work recommends that there is need to improve on water-related policies towards enhancing home connections to potable water for improved access. Also the policies should be geared towards correcting inequitable responsibilities around water-associated tasks which have exposed female gender to various disadvantages.

### **REFERENCES**

Adejumo, S.A. (2020). Urban household water insecurity in Ibadan, Nigeria. *Int. J. Research and Scientific Innovation*, 7(8),240-247.

- Adepoju, A.A. Ogunniyi, L.T. and Agbedeyi, D. (2015). The Role of women in household food security in Osun State, Nigeria. *Int. J. Agric. Policy & Research*, 3(3),104-113. <http://dx.doi/10.15739/IJAPR.032>
- Adeyem, O.E., Odusina, K.E and Akintoye, A.E. (2016) Religion and Labour Force Participation in Nigeria: Is there any Inequality among Women? *African Journal of Reproductive Health*, 20(3),75-84
- Alamgir, A. (2014) Islam and Polygamy: A Case Study in Malaysia. *Procedia and Behavioural Sciences*, 114(2014):889-893. 4th World Conference on Psychology: Counselling and Guidance.
- Asadullah, M.N. and Wahhaj, Z. (2016). Missing from the market:Purdah norm and women's paid work participation in Bangladesh. Discussion Paper Series, IZA DP No 10463, Institute of of Labour Economics
- Awung, M. and Dorasamy, N. (2015) The impact of domestic chores on the career progression of women in higher education: The case of Durban University of Technology. *Environmental Economics*, 6(4),94-102.
- Boateng, J.D., Brown, C.K. and Tenkorang, E.Y. (2013). Gender and water management practices in Ghana. *J. Environ. Earth Sci.*, 3(5):88-100.
- Cassivi, A., Johnston, R., Waygood, E.O.D. and Dorea C.C. (2018) Access to drinking water: time matters. *J Water Health*, 16(4),661-666. doi: 10.2166/wh.2018.009. PMID: 30067247.
- Cerrato, J. and Cifre, E. (2018). Gender Inequality in Household Chores and Work-Family Conflict. *Frontiers in Psychology*, 9, 10.3389/fpsyg.2018.01330},
- Devis, L. and Kaur, M. (2019). Purdah or Ghungat, a powerful means to control women: A study of rural Muslim and non-Muslim women in Western Uttah, Pradesh, India. *Indian J. Gender Studies*, 26(3),336-349. <https://doi.org/10.1177/0971521519861162>
- Dida, A. H., Obae, R. N. and Mungai, A. (2014) Effects of Domestic gender roles on pupils' performance in Kenya certificate of Primary Education in ublic Primary Schools in Garba Tula District, Kenya. *Journal of Education and Practice*, 5(28),94-101
- Enfield, S. (2019). Gender Roles and Inequalities in the Nige rian Labour Market. K4D Helpdesk Report. Brighton, UK: Institute of Development Studies.
- Fleifel, E., Martin, J., & Khalid, A. (2019). Gender Specific Vulnerabilities to Water Insecurity.

- Demie, G., Bekele, M. & Seyoum, B. (2016). Water accessibility impact on girl and women's participation in education and other development activities: the case of Wuchale and Jidda Woreda, Ethiopia. *Environ Syst Res* 5, 11 <https://doi.org/10.1186/s40068-01>
- Graham, J.P., Hirai, M. and Kim, S.S. (2016) An analysis of water collection labour among women and children in 24 sub-Saharan countries. *PLoS ONE*, 11(6), e0155981, <https://doi.org/10.1371/journal.pone.0155981>.
- Hossain, M.Z. (2015). Water: The most precious resource of our life. *Global J. Advanced Research*, 2(9),1436-1445.
- Ifabiyi, I.P., Usman, B.A., Oriire, I.O. and Aledare, A. (2010). Productive Time of women and water supply in Ijumu Local Government Area, Kogi State, Nigeria. *Glob. J. Hum. Soc. Sci.*, 10(5), 45-52.
- Interagency Network on Women and Gender Equality (INWGE) (2005). A Gender perspective on water resources and sanitation. UN Department of Economics and Social Affairs, Commission for Sustainable Development, Background Paper No 2, DESA/DSD/2005/2, 12<sup>th</sup> Session. New York.
- Khandker, V. Gandhi, V.P. and Johnson, N. (2020). Gender perspective in water management: The involvement of women in participatory water institutions of Eastern India. *Water*, 12, 196, doi.103890/w2010196.
- Maphosa, B. (2010). The Challenges facing women in the water profession. *Africanus*, 40(2):40-52.
- Mashall, S. (2011). The water crisis in Kenya: Causes, Effects and Solution. *Global Majority E-Journal*, 2(1),31-45
- Misra A.K. (2014). Climate change and challenges of water and food security. *Int. J. Sustainable Built Environment*, 3(1):153-165, <https://doi.org/10.1016/j.ijbsbe.2014.04.006>.
- Ngarava, S., Zhou, L. and Monde, N. (2019). Gendered water insecurity: A structural equation Approach for female-headed households in South Africa. *Water*, 2019, 11, 2491, doi: 10.3390/w11122491.
- Ogunbode, T.O. and Ifabiyi, I.P. (2014). Determinants of domestic water consumption in a growing urban centre in Osun State, Nigeria. *Afr. J. Environ. Technol.*, 8(4):247-255
- Ogunbode, T.O. and Ifabiyi, I.P. (2017). Domestic water utilization and its determinants in the rural areas of Oyo State, Nigeria using multivariate analysis. *Asian Research Journal of Arts and Social Sciences*, 3(3),1-13.
- Ogunbode, T.O. and Ifabiyi, I.P. (2019) Relationship between evaporation and water availability in the tropical regions: A case study of a south western city in Nigeria. *Arch Curr. Res.*, 16(4),1-10.



- Ogunbode, T.O. (2015). Pattern of domestic water utilization and Management in selected rural areas of Oyo State, Nigeria. An unpublished PhD Thesis, Department of Geography and Environmental Management, University of Ilorin, Nigeria, p215
- Okpechi, P.A., Eloma, U. E. and Ekpo, E. B. (2016). Negative effects of domestic chores on role performance of academic women in tertiary institutions and the need for effective management and counselling in Cross River State, Nigeria. *International Journal of Education, Learning and Development*, 4(5),12-22
- Olajuyigbe, A.E. (2010). Some factors impacting on quantity of water used by households in a rapidly urbanizing state capital in south western Nigeria. *J. Sustainable Development in Africa*, 12(2),321-337.
- Osinuga, A.; Janssen, B.; Fethke, N.B.; Story, W.T.; Imaledo, J.A.; Baker, K.K. (2021). Understanding Rural Women's Domestic Work Experiences (DWE) in Ibadan, Nigeria: Development of a Measurement Tool Using Confirmatory Factor Analysis. *Int. J. Environ. Res. Public Health*, 18, 11043. <https://doi.org/10.3390/ijerph182111043>
- Pastner, C.M. (1974). Accommodations to Purdah: The Female Perspective. *Journal of Marriage and Family*, 36(2),408-414
- Pozarny, P. F (2016). Gender roles and opportunities for women in urban environments (GSDRC Helpdesk Research Report 1337). Birmingham, UK: GSDRC, University of Birmingham.
- Solihu, H., Bilewu, S.O. (2021). Availability, coverage, and access to the potable water supply in Oyo State Nigeria, *Environmental Challenges*, Volume 5, 100335. <https://doi.org/10.1016/j.envc.2021.100335>.
- Vandas, S.J., Winter, T.C. and Battaglin, W.A. (2002). Water and the Environment. Bureau of Reclamation. AGI Environmental Awareness Series, 5; p68. (Downloaded on 6/5/2021.
- Van der Zaag, P. and Savenije, H.H.G. (2006). Water as an economic good: The value of pricing and the failure of markets: Value of Water Research Report Series No. 19, UNESCO-IHE Institute of Water Education, delft, The Netherlands, p32. Downloaded on 5/5/21.
- WHO & UNICEF (2017). Progress on Drinking Water, Sanitation and Hygiene: 2017 Update and SDG Baselines.