

*Full Length Research Paper*

# **Socio-demographic differences in the evaluation of water resources planning in South West, Nigeria**

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**The study examined differences in public assessment of water resources planning in Oyo State (southwest, Nigeria) based on certain socio-demographic variables such as gender and socio-economic background. The results showed that there were no significant differences in the way public assessed the planning of water resources on the basis of the two socio-demographic variables. The implication of the findings were discussed and recommendations made as to how water resources planning can be made more effective and result-oriented in order to ensure the availability of potable water and its efficient use.**

**Key words:** Gender, socio-economic, background, evaluation, water resources, planning.

## **INTRODUCTION**

The subject of water resources planning is highly critical and essential towards the adequate supply of potable and safe water to the inhabitants of any given locality. Water resources planning is an integral aspect of infrastructural and utility-planning. Planning in its real context ought to be seen as an activity that is corporate, future-oriented, non-routine, non-utopian and not based on trial and error (Alexander, 1986). In the same vein, water resources planning should be an activity that is people-centered innovative, efficient and targeted towards instilling a procedure for allocating available water resources amongst the various uses existing. Given this scenario, it becomes essential and critical to assess the state of water resources planning in Nigeria using Oyo State as an example. A probable way of doing this may be to examine it from a public perspective. This means that water resources planning as an activity should be examined based on the ways the public perceived how it is being carried out.

This is necessary because planning in itself is an activity that cannot be carried out in a vacuum and there must be reasons why it is observed. Alexander (1986)

opines that planning is necessary as a way of mitigating against the excesses of the market system (price mechanism) and creating an atmosphere for exercising authority and expertise. Whichever way it may be viewed, planning is essential in every facet of human endeavour. Water resources like any other resource is limited both in quantity and quality overtime and space and needs to be well planned in order for it to go round. For its potentials and benefits to be realized and sustained, it must be adequately planned to avoid wastes and inefficiency in its provision and usage. Hence it is imperative to be given adequate attention.

In Nigeria, water resources planning belongs to the public domain. For this reason, it is an activity handled by government agencies and parastatals. As the federal level, it is handled by the Federal Ministry of Water Resources. At the state level it is a responsibility executed by the State Ministry of Water Resources in collaboration with State Public Water Boards or Corporations. In Oyo State, water resources planning is an activity undertaken by the State ministry of water resources in conjunction with the Oyo State Water Corporation. This study examines the way public views and assess activities bordering on water resources planning and determined whether there are significant differences in such assessment based on gender and

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**Table 1.** T-test comparison of the mean perception of respondents on the basis of gender.

Gender	Sample (n)	Mean	Standard deviation	Tcal	Tobs/crit	P
Male	98	20.67	5.590	1.095	1.95	0.692*
Female	102	19.78	6.092			NS

\* Not significant as  $p > 0.05$ .

**Table 2.** T-test comparison of the mean perception of respondents on the basis of socio-economic background.

Socio-economic background	Sample (n)	Mean	Standard deviation	Tcal	Tobs/crit	P
Low	172	20.08	6.011	0.373	1.95	0.583
High	38	20.50	5.858			NS*

\*Not significant as  $p > 0.05$ .

socio-economic background.

### Statement of problem

This study examined differences in public perception and evaluation of water resources planning in Oyo State. It determined whether there exist differences in the way the public evaluate efforts in the area of water resources planning in Oyo State based on some socio-demographic factors such as gender, and socio-economic background. This is done in realization of the fact that available water resources are fast depleting and every attempt must be made to ensure that they are properly managed and utilized through an efficient planning process. The last three decades have seen an increased use and pressure on existing water resources. Crisis and unpleasant experiences ought to be averted by ensuring that wastages in the use of water are curbed and water is reasonably allocated amongst several uses through responsible planning. This view makes it critical and mandatory that a study be instituted to determine how the public view government efforts in the area of water resources planning and proffer recommendations, as to how this aspect of water resources management can be made more effective and result-oriented.

### Research question

Do respondents differ in their evaluation and perception of water resources planning in Oyo State based on gender and socio-economic background?

## METHODOLOGY

### Sample and sampling procedure

The study involved 200 respondents consisting of (98 males and 102 females) spread over six local government areas of Oyo State.

The respondents were selected using multi-stage stratified random sampling on the basis of administrative zones, local government areas and wards in Oyo State.

### Instrument

The major instrument used in the study was a questionnaire titled public perception and evaluation of water resources planning in Oyo State (Appendix I). It consists of three sections; Section A covered issues on personal background information of respondents such as age, sex, occupation, marital status, educational background and family size. Section B covered the evaluation of government efforts and activities in the area of water resources planning while section C covered the respondents' perception of the state of water resources planning in Oyo State. Before administration of respondents, the instrument was tested for reliability and it yielded a Cronbach alpha value of 0.721.

### Procedure

The data collection was undertaken by the researcher with the assistance of three trained research assistants. Questionnaires were administered on the respondents and were retrieved immediately after they had been filled. Due to the staggered nature of the data collection, the exercise lasted for two months.

### Data analysis

Analysis of the collected data involved the comparison of the means of responses from the respondent samples. The significance level was set at 0.05. Analyses were computed with the statistical package for the social science (SPSS) software version 15.0 for windows.

## RESULTS

The T-test statistics was used in analyzing the data since the variables under study, that is, gender and socio-economic background exists in two groups. The results are presented in Tables 1 and 2.

From Table 1, it is evident that respondents do not

differ in their perception and evaluation of water resources planning efforts in Oyo State on the basis of gender, because the t-value calculated (1.095) is less than t-value observed from the statistical table that is 1.95. Furthermore the p value of 0.692 is greater than the significance level set at 0.05. Hence, it can be said that respondents do not differ in their perception or view about water resources planning whether male or female as they tend to see it the same way or from the male perspective.

Table 2 shows that respondents also do not differ in their perception of water resources planning based on socio-economic background because the t-value calculated (0.373) is less than that t value observed from the table of 1.95. Furthermore, the p value of 0.583 is greater than the significant level set at 0.05 and is therefore not significant at 5% confidence level. In simple terms, it can be concluded that there exist no difference in the perception of respondents on water resources planning as both groups that is, rich and poor tend to see it the same way.

## DISCUSSION

From the result shown in the previously, it is clear that there were no significant differences in the perception and assessment of the public about water resources planning. It appears all respondents whether rich or poor, male or female viewed water resources planning the same way, that is, an activity within the public domain aimed at ensuring effective allocation of existing water resources among the various uses. It is not surprising that this was the result of the survey in the sense that in most developing countries, the public tend to see the responsibility of providing safe and potable water as one of the responsibilities of government, especially the various agencies involved in water provision. Since the planning of available water resources is one of the major steps towards efficient supply of potable water for public use, it is not amazing to see the public view it that way in their assessment of water resources planning.

The study was able to establish among other things, that the state of water planning is still low which probably explains why the provision of public water supply has rather been epileptic and problematic. Indeed, Faniran (1972, 1977, 1983, 1986 and 1991), Amori (2009), Ayoade, (1975a, b), Azeez (1972), Ifabiyi (2008), and Oyebande (1977) all lend credence to this assertion. Given this current scenario it becomes imperative that far reaching decisions needs to be taken to ensure that water resources planning is not only a successful activity, but must be realistic, result-oriented and backed by reliable data. When this is done, it becomes relatively easier to evolve a mechanism for allocating available water resources effectively among the various uses of water be it domestic, industrial, agricultural, production etc. Nigeria is not the only country that has been faced

with a defective planning system. Sewell (1985) highlighted the experience, in Australia and how it has impacted heavily on the various mechanisms set up for public water supply. It is high time that water resources planning is fine-tuned and tailored to meet up with the reality of the current experience in the country. The situation in Oyo State amply reflects what is going on in other States in Nigeria as water resource planning is an activity that is bedeviled with much bureaucratic controls and officialdom. In view of this current situation, it is recommended that water resource planning be given more attention in terms of budgetary allocation, regular funding, recruitment of qualified and tested planning officials and be freed of officialdom and unnecessary bureaucracy. For water resource planning to be effective, it is reasonable that basic activities should start off with each river basin or catchment area. Indeed, the river basin should serve as the basic planning unit Faniran (1972, 1975, 1983, 1987 and 1991), Ayoade (1975 a, b). It is equally necessary that holistic planning strategies which reorganize the need to merge sound economic policy with realistic environmental management strategies be evolved (Sewell 1985; Oyebande, 1977). It is expedient that water resource planning be developed for each catchment area in Oyo State. This, on the whole will provide a blueprint for enhanced future sustainability of existing water resources. Furthermore, it will establish a framework and plan on how to share available water resource between human consumptive needs with consideration for physical and environmental values. The plan should also identify non-consumptive water uses such as fisheries and tourism which are water-based and serve as vital ingredient for enhancing state and regional economics development. Water resource plans should also seek to manage each area's water bodies such as rivers, lakes, dams and springs and if necessary, underground and overland flow. Needless to say that such water resource plan if developed ought to be revised and up-dated on a regular basis. The planning process is better fast-tracked with the provision of sophisticated and modern computer facilities to ease the analysis of massive data generated for the purpose of planning backed by regular surveys. Finally, there may be the need to devise a public private partnership initiative by engaging tested private water consultants to complement the activities of public agencies responsible for water supply. This arrangement will equally ease the conduct of resource surveys aimed at generating data for use in water resource planning.

## Conclusion

This study sought to determine whether there are differences in the public perception and evaluation of water resource planning on the basis of some demographic factors. Results showed that there were no

significant differences in the basis of gender and socio-economic background. Respondents perceived water resource planning as an activity embarked on by the government but ineffective due to some problem identified in the paper. The study went further to prefer some solutions towards enhancing the effectiveness of water resource planning in Oyo State.

## REFERENCES

- Alexander OR (1986). *Approaches to planning*. New York: Gardon and Breach Science Publishers, pp. 39-56.
- Amori AA (2009). *Water Resources Mapping in Nigeria: Fundamental Issues, Benefits and Constraints*. *Water Resour.* 18: 18-25.
- Ayoade JO (1975a). *Water Resource and other Development in Nigeria*. *Hydrol. Sci. Bull.*, 20(4): 581-591.
- Ayoade JO (1975b). *On Water Resources Management in Nigeria*. *Nig. J. Econ. Soc. Stud.*, 17(1): 35-48.
- Azeez LO (1972). *Rural Water Supply in the Basement Complex of Western State, Nigeria*. *Hydrol. Sci. Bull.*, 17(1): 77-110.
- Faniran A (1972). *River Basins as Planing Units In Bardner, K.M (ed) Planing for Nigeria, Ibadan. University Press, Ibadan, pp. 128-154.*
- Faniran A (1977). *The use of Drainage Basins in Development Planning in Western Africa*. *Nigerian Geogr. J.*, 20(2): 189-198.
- Faniran A (1991). *Water Resource Development in Nigeria*. University Lecture Series. Ibadan: Ibadan University Press, p. 95.
- Faniran A (1983). *New Approach to Water Supply in Developing Countries: Cases from the Nigerian Situation*. *Natural Resour. Forum*, 7(3): 271-273.
- Faniran A (1972). *River basins as Planning units in Barbour, K. M. (ed) Planning for Nigeria. Ibadan: Ibadan University Press, pp. 128-154.*
- Faniran A (1986). *The Perception of Water Quality among Rural Communities in Southwestern Nigeria. Lessons for Planners*, *Water Int.*, 11(4): 169-174.
- Faniran A (1987). *Institutional Arrangement for the Planning and Management of Water Supply in Nigeria*. In Wunderlich and T. Egbert and A. A. Balkoma (ed). *Water for the Future: Rotterdam and Boston*, pp. 317-333.
- Ifabiye I (2008). *Water Scarcity and the Way Forward in Saliu, H. A. Aderinto. A., Jimoh. I. H and Arosanyin, T. (eds) Perspective on Nation Building and Development in Nigeria. Lagos: Concept Publications, pp. 65-82.*
- Oyebande BL (1977). *Urban Water Supply Planning and Management in Nigeria*. *Geo. J.*, 2(5): 403-412.
- Sewell WRD (1985). *Comprehensive Water Planing: An Agenda for Change In Sewell WRD, Handmer JW, Smith DI (eds) "Water Planing in Australia from myth to Reality. Canberra: Centre for Resources and Environmental Studies, Australian National University.*

**APPENDIX**

**Appendix 1**

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Questionnaire on Public Perception and Evaluation of water resources planning in Oyo State Nigeria.

Dear respondent,

This questionnaire is designed to obtain information on public operation of the contribution of public water agencies to water resources planning in Oyo state. You are implored to please corporate by providing honest and reliable answers to the items contained in the questionnaire. Please be assured that all the information supplied shall be treated with utmost confidentiality. For this reason, you are not required to fill your name. We thank you for your anticipated corporation.

**Section A**

Background information

- 1. Local government area .....
- 2. Ward.....
- 3. Age.....

- a) 15 – 25years
- b) 26 – 35years
- c) 36 – 45years
- d) 46 – 55years
- e) Above 56years

4. Sex: (a) male  (b) female

5. Marital status: (a) single  (b) married

6. Occupation:

- (a) Civil servant
- (b) Professional
- (c) Self employed
- (d) Private sector employee
- (e) Unemployed

7. Size of family:

- (a) Couple
- (b) 3 – 5 members
- (c) 5 – 10 members
- (d) Above 10 members

8. Socio economic background: (a) low  (b) high

**SECTION B**

**STATE OF WATER RESOURCES PLANNING**

9. Are you familiar with activities of public water agencies as regards water resources planning? (a) Yes  (b) No

10. Which of the following aspect of water resources planning are you most familiar with?

- a) Generation of large data on existing water resources in Oyo state
- b) Identification and demarcation of water consumers
- c) Forecast of future trends in water demand
- d) Making of projection on future levels of public water supply
- e) Preparation of a waste plan on water generation and supply
- f) Preparation of model on cost sharing and recovery procedures

11. How will you rate the performance of existing public water agencies in the area of water resources planning?

- a) Excellent
- b) Good
- c) Satisfactory
- d) Fair
- e) Poor

12. Do you feel that public water agencies have been receiving adequate support from the government in the area of water resources planning? (a) Yes  (b) No

13. What factors will you attribute to the success of public water agencies in the area of water resources planning?

- a) Availability of an efficient data storage system
- b) A well spread office network to ensure regular data supply
- c) Adequate funding
- d) Public enlightenment
- e) An efficient and productive workforce
- f) Regular research on public water related issues

14. Which problems will you identify as being responsible for the inability of public water agencies to cope effectively with the task of water resources planning?

- a) Poor discipline in the implementation of past water plans in Oyo state
- b) Poor budget allocation to water resources planning
- c) Frequent changes in policies
- d) Limited supply of modern computer facilities and software to aid data processing
- e) Poor working condition of its personnel
- f) Lack of continuity in the coordination of its activities
- g) Inadequate skilled manpower

15. What suggestion will you make that will help public water agencies to improve in the task of water resources planning?

- a) Regular and improved funding of researches on water resources management
- b) Provision of more sophisticated computer facilities and software to aid the processing of enormous data generated from researches
- c) Recruitment of skilled man power to boost existing workforce
- d) Public enlightenment on the activities of public water agencies on water resources planning
- e) Initiation of more researches aimed at generating more data on water resources planning
- f) Commissioning of private consultants and NGOs to compliment the services of public water agencies in the area of water resources planning
- g) The production and regular revision of a water resources master plan to guide the planning and use of water resources in Oyo state

**SECTION C****PREPARATION OF THE CONTRIBUTIONS OF PUBLIC WATER AGENCIES TO WATER RESOURCES PLANNING**

Please use the five point scale to indicate your degree of agreement or disagreement with the following statements:  
SA=Strongly Agree, A= Agree, U= Uncertain, D= Disagree, SD= Strongly Disagree.

<b>STATEMENT</b>	<b>SA</b>	<b>A</b>	<b>U</b>	<b>D</b>	<b>SD</b>
1. Public water agencies as constituted are incapable of planning water resources in Oyo state					
2. Public water agencies can improve on water resources planning if they are better funded and equipped					
3. The task of water resources planning constitute an additional burden on public water agencies					
4. Inability to generate regular data on existing water resources has limited the efficiency of public water agencies in the area of water resources planning.					
5. Most public water agencies do not appreciate the need to accord more priority to water resources planning					
6. Public water agencies have fared better in the area of water resources planning					
7. The absence of a detailed water resources master plan has made water resources planning difficult					
8. Water resources planning are better enhanced through adequate funding and staffing of public water agencies					
9. Public water supply will be better improved if more resources are tagged at water resources planning					
10. A discipline and hardworking staff in public water agencies will boost water resources planning					