

Assessment of Problems Affecting Public Water Distribution in a Humid Tropical Zone

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Abstract The paper determined the extent to which residents in Iju-Ishaga southwest, Nigeria (a rapidly developing fringe settlement in Lagos) differ in their assessment of major problems affecting the distribution of public water supply based on some socio-demographic variables such as gender, marital status and socio-economic background. The study made use of 240 respondents (133 males and 107 females) spread over the eight wards in the local government. Data collection involved the use of a questionnaire while its analysis employed the use of frequency counts and t-test statistic in the assessment of the respondents about the problems affecting the distribution of public water in the study area. The implications of the findings were identified and recommendation made on how to ensure effective public water supply in Iju-Ishaga.

Keywords Public Water Supply, Distribution, Assessment, Service Delivery, Waterworks

1. Introduction

In recent years due to increase in population and urbanization, the provision of safe and portable water to the Nigeria public has been on steady decline in terms of service quality and distribution. This has made access to public water supply a very difficult issue and has resulted in poor sanitation and spread of water borne diseases. Indeed, the issue of distribution is very crucial to public water supply if it is agreed that water is not only a commodity but a right to which people should not be denied. Hence it is necessary that water supply should be given a top priority as a way of enhancing a healthy and strong population.

The issue of distribution is very important and indeed an essential step in the provision of safe and potable water. Since the places of consumption of water are relatively far from the source, there is need to devise an effective distribution system whereby water can be spread to every places where it is concerned. Hence in addition to pipes, there is the need to use joints so as to get water to the desired location. What is more, it is believed often times that impurities in public water supply are mainly caused by leakages that usually arise from joints in the water distribution system. In all, access to adequate water supply is better enhanced by an efficient distribution system (Adebayo and Ifabiyi, (1999), Amori, (2009), Azeez (1972), Ayoade (1975a&b) and Handidu (1990)). Distribution is a

critical problem as far as the provision of safe and potable water supply is concerned in most developing countries including Nigeria. This is because the physical landscape in addition to poor technology has made it difficult to evolve, operate and maintain an effective distribution system for public water supply. Furthermore, the epileptic and frequent fluctuations observed in power supply in Nigeria in the last three decades has made it difficult for existing water treatment plants and booster stations to operate optimally as electric power is not available to power them and distribute water effectively to the consumers (Faniran, (1981, 1983 & 1987), Linsely *et al.*, (1993), Walski, (1994), Oshodi and Oloni, (2008) and Brookshire and Whittington, (1993).

The severity of the above problem serves as the impetus and rationale for this study. Specifically, this study investigated whether there are significant difference in the way respondents using Iju-Ishaga as a case study perceive the problems of public water distribution based on some socio-demographic factors such as gender, marital status and socio-economic background. This is with a view of determining the nature of problem limiting water and distribution access to safe and potable water supply.

1.1. Statement of Problem

The study investigated whether there are differences in the public assessment of water distribution in Iju-Ishaga, Lagos on the basis of some socio demographic variables such as gender, marital status and socio-economic background. This is in view of the fact that Iju-Ishaga which is a rapidly growing semi-urban settlement in Lagos state had over the years faced some problems in the distribution of public water supply. The increasing population of the area has exerted a

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lot of pressure on existing water distribution system. It becomes essential for a study to be conducted into how inhabitants of the area perceive the problem of water distribution and how it can be resolved so that the public can have unhindered access to water supply and through that enhance balanced regional development

1.2. Research Question

Do respondents differ in their perception of the nature of water distribution problems in Iju-Ishaga on the basis of gender, marital status and socio-economic background?

2. Methodology

2.1. Sample and Sampling Procedure

The study involved 240 respondents consisting of (133 males and 107 females) spread over eight wards in the local government area. The respondents were selected using stratified random sampling on the basis of local government area and wards.

2.2. Instrument

The instrument used in the study for the purpose of obtaining information from respondents was a questionnaire titled "Questionnaire on the public perception of public water distribution problems in Iju-Ishaga. It consist of three sections with section A covering issues on personal background information of respondents such as age, sex, occupation, marital status, educational background and family size. Section B covers issues bordering on the nature of problems affecting the distribution of public water supply in Iju-Ishaga while section C dwells on the public perception on the problems affecting the distribution of public water supply in the study area. Before administration on respondents, the instrument was tested, for reliability and it yielded a cronbach alpha level of 0.715.

2.3. Procedure

2.3.1. Data collection

The data collection exercise was undertaken by the researcher with the assistance of two trained research assistants. Questionnaires were administered on the respondents and were retrieved immediately after they had been filled. It lasted three weeks.

2.3.2. Data Analysis

Analysis of the collected data involved the comparison of the means of responses from the respondents using the t-test statistic for independent sample. The significance level was set at 0.05. Analyses were computed with the Statistical Packages for the Social Sciences (SPSS) software version 15.0 for windows.

3. Results

The t-test statistics was used in analyzing the data since

the variable under study, that is, gender, marital status and socio-economic background exists in two groups. The results are presented in table 1 to 3.

Table 1. T-test Comparison of the Mean Perception of Respondent on the Basis of Gender.

Gender	Sample (N)	Mean	Standard Deviation	T.cal	T.cri	P
Male	133	15.32	3.337	0.868	1.96	0.561
Female	107	14.92	3.568			Ns*

Not significant as $P > 0.05$

Table 2. T-test Comparison of the Mean Perception of Respondents on the Basis of Marital Status.

Marital Status	Sample (N)	Mean	Standard Deviation	T.cal	T.cri	P
Single	128	15.80	3.897	1.811	1.96	0.631
Married	112	14.91	3.230			Ns*

*not significant as $P > 0.05$

Table 3. T-test Comparison of the Mean Perception of Respondents on the Basis of Socio-Economic Background.

Socio-Economic Background	Sample (N)	Mean	Standard Deviation	T.cal	T.cri	P
High	32	11.17	3.417	0.868	1.96	0.542
Low	208	15.41	3.239			Ns*

*not significant as $P > 0.05$

From table 1, it is obvious that respondents do not differ in their perception of problems affecting the distribution of public water supply in Iju-Ishaga on the basis of gender. This is so because the t value calculated (0.868) is less than the t value observed from the statistical table, that is 1.96. Furthermore, the P value of 0.561 obtained is greater than the significance level set at 0.05. In other words, it can be inferred that respondents do not differ in their perception or view about the problems of public water distribution in Iju-Ishaga on the basis of gender as both male and female respondent see it the same way.

Table 2 reveals that respondents do not vary in their perception of problems affecting public water distribution in Iju-Ishaga on the basis of marital status because the t value calculated (1.811) is less than the t value observed from the statistical table, that is 1.96. Furthermore the p.value of 0.631 obtained is less than 0.05 and is therefore not significant at 5% confidence level. Hence, it can be safely concluded that there exist no difference in the perception of respondents on the problems affecting the distribution of public water supply in Iju-Ishaga on the basis of marital status as both the married and the single see it the same way.

Table 3 shows that there is no significant difference in respondents perception of problems affecting the distribution of public water supply in Iju-Ishaga on the basis of socio-economic background. From the table, the calculated t value is 0.838 which is less than the critical or observed t-value obtained from the statistical table which is 1.96. Furthermore, the t-test is not significant at 5% confidence level (0.05) since the P value calculated, which is 0.542

which is greater than 0.05. Hence it can be concluded that there is not difference in respondents perception of problems affecting the distribution of economic background as both the rich and poor perceives the problems the same way.

4. Discussion

The results in the preceding section showed that there were no significant differences in the perception of respondents on the problems of water distribution in Iju-Ishaga based on gender, marital status and socio-economic background. Irrespective of whether the respondents are male or female, single or married, rich or poor, they all viewed the problem of water distribution in Iju-Ishaga the same way. From the study, it was established that the respondents believe strongly that the distribution network is faulty and hence the problem of inadequate water supply and the increasing incidents of water scarcity in the area. Even though Iju-Ishaga is a rapidly urbanizing area, yet it is amazing to note that water supply in the area is highly inadequate. The survey conducted showed that several people are yet to be connected to public water supply and where they are, due to frequent cases of pipe leakage and vandalism, water supply have been cut short. It is not surprising therefore to see respondents expressing the same view about water supply in Iju-Ishaga due to the poor water distribution network. This brings to fore the need to address the issue of water distribution network in Nigeria. This is because it is the only means by which consumers can access potable water from the various public water agencies. As mentioned earlier, there are several problems affecting public water in distribution. Urgent and realistic solutions ought to be proffered so that people can have unhindered access to public water supply. Critical aspects of public water distribution that requires urgent attention include frequent cases of pipe leakages and vandalism either through road construction or the poor quality of pipes used in building the distribution network. Closely related to this is the inadequate number of booster stations to aid effective water distribution and incessant power failure. Pipe leakages and vandalism can be eradicated if durable pipes are used and effective monitoring is adopted whenever there is road construction or maintenance works. Incessant power failure is a rather endemic problem that has to be addressed holistically. The establishment of more power generation and transmitting plants appears the major step forward in this area. It is gratifying to note that Federal, States and local governments are in joint collaboration to ensure the actualization of this solution. The establishment of booster stations is a capital-intensive venture of great financial implications. Where the funds are available, it becomes an easy venture to undertake. However, in the face of current economic downturn, it is recommended that a public – private partnership initiative be devised where the costs can be equitably shared. To allow for effective execution, modalities should be properly drawn to avoid a conflict of

interests. If need be, the operation and management of the initiative could be left in the hands of private investors while government retains the ownership. In all, access to public water supply will be better enhanced and boosted if and whenever distribution problems affecting water distribution is adequately tackled and better management of water resources encouraged.

5. Conclusions

This study sought to determine whether there were significant differences in peoples perception of the problems affecting the distribution of public water supply in Iju-Ishaga, a suburb of Lagos. Result showed that there were no difference on the basis of some socio-demographic factors such as gender, marital status, and socio-economic background. Solutions were proffered to the problems identified.

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