

# Principals' Personal Variables and Information and Communication Technology Utilization in Federal Capital Territory Senior Secondary Schools, Abuja, Nigeria

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## Abstracts

The study investigated principals' personal variables and information and communication technology utilization in Federal Capital Territory (FCT) senior secondary schools, Abuja, Nigeria. The study adopted the correlational research design. The study used a sample of 94 senior secondary schools (including public and private) in FCT. Stratified sampling technique was used to select 94 principals in the sampled schools. The data for the study were gathered through a questionnaire, which was administered to the principals in the selected senior secondary schools in FCT. To ascertain the validity of the instrument, content validity was adopted. "Principals' Utilization of Information and communication Technology Questionnaire" (PUICTQ) was pilot-tested and reliability coefficient of 0.83 was obtained. Frequency counts, mean score and standard deviation were used to answer the research question while t-test and Pearson product-moment correlation coefficient were used to test the hypotheses at 0.05 level of significant. The study showed that the level of ICT resources utilization by the principals in FCT senior secondary schools was moderate. Also, the study ascertained that there was significant relationship between principals' personal variables and ICT utilization in FCT senior secondary schools. It was concluded that principals' personal variables of gender, experience and ownership of school could influence their utilization of ICT in the management of senior secondary schools in FCT. It was therefore recommended that efforts should be made by the principals to upgrade their knowledge of ICT utilization for their daily tasks for effective management.

**Keywords:** Information and Communication Technology (ICT), Utilization, Personal Variables, Principals, Senior Secondary Schools

## 1. Introduction

The achievement of the secondary education goals is dependent on the extent to which the principals are able to apply the appropriate administrative processes in the school operations. The secondary level occupies a critical position in the educational system. "Secondary education is the education children receive after primary education and before the tertiary stage: The broad goals of secondary education are preparation of the individual for useful living within the society and higher education" (Federal Republic of Nigeria (FRN), 2004, p. 18). Secondary education is of six years duration, given in two stages: three years junior secondary school and three years senior secondary schools. Improved secondary education is essential to the creation of effective human capital in any country (Evoh, 2007). The need for Information Communication Technology (ICT) in the Nigerian secondary schools cannot therefore, be overemphasized. In this technology-driven age, everyone requires ICT competence to survive. Yusuf (2005) opined that ICT can make education more efficient and productive, thereby engendering a variety of tools to enhance and facilitate principals' professional activities and increase managerial effectiveness. Organizations are finding it very necessary to train and re-train their employees to establish or increase their knowledge of computers and other ICT facilities (Adomi & Anie, 2006). Achievement in the ICT penetration and usage in senior secondary school is dependent on the recognition of the importance of ICT application to education for sustainable development.

Over the years, the administrative work of the principal has been print-based, and various documents are kept in the form of records. The principal cannot perform his/her administrative duties without accurate, timely, sufficient and relevant information (Asiabaka, 2010). The challenges associated with storage, preservation and presentation of large volumes of information in paper form has made managerial processes in the schools very cumbersome. Thus, alternative methods provided by ICT have become imperative. In the same vein, principals need training not only in computer literacy but also in the utilization of various kind of computer based educational software in school management. The principals in Federal Capital Territory, Nigeria need to be well informed in the use of ICT resources for effective management of the schools. ICT utilization will prove beneficial in improving Nigeria's educational system and giving students a better education. The key to successful ICT implementation is for government to make useful policies and provide enough funds to the institutions on the one hand and the implementation of policies by the coordinating bodies and the institutions

themselves on the other hand.

School administrators as the leaders of their institutions need to actively initiate practical actions for relevant educational changes and innovations such as the integration and utilization of ICT into their administrative functions for quality education. A leader is someone who influences a group of people to achieve a specific goal. According to Okorie (2002) leadership is getting the job done through people. Peretomode (2001) described leadership as the process of providing direction and influencing individuals to achieve goals. Effective leadership involves identifying goals and the means to achieving them; it is not the exercise of power (Hadden, 2008). The personal variables of a leader remain essential factors in the management of the school. Gender, experience, ownership of school and the likes are factors that determine the extent to which a principal is able to achieve the school goals through effective utilization of ICT in the school management. Okorie (2002) noted that principal's personal characteristics which include age, marital status, teaching experience, academic qualifications and sex cannot be divulged from the way and manner at which the school is being managed. Thus, the study investigated principals' personal variables and ICT utilization in Federal Capital Territory senior secondary schools, Abuja, Nigeria.

### 1.1 Purpose of the Study

Specifically, the study sought to achieve the following objectives:

- i. Establish the level of ICT utilization by the principals in the management of FCT senior secondary schools.
- ii. Ascertain whether principals' personal variables of gender, experience, and ownership of school can influence their ICT utilization in FCT senior secondary schools.
- iii. Ascertain if there is any significant relationship between principals' personal variables and ICT utilization in FCT senior secondary schools.

### 1.2 Research Question

In specific terms, attempt was made by this study to provide answer to the following research question:

- i. What is the level of ICT utilization by the principals in the management of FCT senior secondary schools?

### 1.3 Hypotheses

The following null hypotheses were formulated to guide this study:

- Ho<sub>1</sub>: There is no significant difference between male and female principals' ICT utilization in FCT senior secondary schools.
- Ho<sub>2</sub>: There is no significant difference between experienced and inexperienced principals' ICT utilization in FCT senior secondary schools.
- Ho<sub>3</sub>: There is no significant difference between principals' ICT utilization in public and private senior secondary schools in FCT.
- Ho<sub>4</sub>: There is no significant relationship between principals' personal variables and ICT utilization in FCT senior secondary schools.

## 2. Methodology

### 2.1 Research Design

The study adopted the correlational research design. This method was used to elicit responses from a sample of principals in FCT senior secondary schools. The sample of the study was made up of 94 senior secondary schools in FCT. Stratified sampling technique was used to select the 94 senior secondary schools on the basis of 50% public and 50% private from 187 senior secondary schools in FCT. Also, a total number of 30 public senior secondary schools and 64 private senior secondary schools were selected. Thus, a total number of 94 principals were randomly selected from the FCT senior secondary schools as sample for the study that is 30 principals in public senior secondary schools and 64 principals in private senior secondary schools. In this study, a questionnaire was designed to elicit information from the respondents. The questionnaire was tagged "Principal's Utilization of Information and Communication Technology Questionnaire" (PUICTQ), which was administered to principals. Also, the PUICTQ comprised of two sections (A and B). Section A covered personal information of the respondents while section B was used to obtain information on the level of principals' ICT utilization. To ascertain the validity of the instruments, content validity was adopted. The instrument was pilot-tested and reliability coefficient of 0.83 was obtained.

### 2.2 Procedure for Data Collection

In this study, a questionnaire was used to gather the relevant information from the principals in FCT senior secondary schools. The researcher administered the copies of the questionnaire personally and with the research

assistants in the sampled senior secondary schools. The instrument tagged “Principal’s Utilization of Information and Communication Technology Questionnaire” (PUICTQ) was administered to the principals. Thus, 99% of the instrument was returned and used for data analysis. Furthermore, five statistical techniques were used for data analysis. The frequency counts, mean score and standard deviation (SD) were used to answer the research question. Also, t-test was used to test hypotheses one to three while the Pearson product-moment correlation coefficient ( $r$ ) was used to test hypothesis four. Therefore, 0.05 level of significant was used to test the hypotheses. The decision rule for interpretation of the results of the data analysis was that a mean score of 2.50 and above was considered as positive response, and less than 2.50 was considered as negative response. The calculated probability ( $p$ -value) that was greater than the significant level of 0.05 was considered accepted while the  $p$ -value that was less than the significant level of 0.05 was considered rejected.

### 3. Results

**3.1 Research Question One:** What is the level of ICT utilization by the principals in the management of FCT senior secondary schools?

**Table 1: ICT Utilization by FCT Principals**

S/N	Items	N0	Mean	SD	Remarks
<b>The Principal:</b>					
1.	uses desktop computer for typing, processing and storage of information on the school, the students, the staff and so on.	93	3.60	0.62	To very large extent
2.	uses laptop computers at home or outside the school to finished the unfinished office work.	93	1.93	1.08	Seldomly
3.	ensures that computer laboratory is used by the teachers and the students for teaching and learning.	93	3.00	1.17	Moderately
4.	ensures that television sets are used by the teachers and the students to watch educational programmes and current affairs.	93	2.52	1.20	Moderately
5.	ensures that radio/tape recorders are used by the students to learn relevant languages.	93	2.57	0.91	Moderately
6.	uses mobile phones/ handsets to call and send text messages to the staff and the parents.	93	3.77	0.62	To very large extent
7.	uses internet facilities to receive and send email to parents on their children’s information, staff, other principals, external examining bodies, ministry of education officials and so on.	93	3.02	0.98	Moderately
8.	encourages the use of video machine for educational programmes and purpose.	93	2.48	1.23	Seldomly
9.	uses generating set for the school when there is power supply shortage.	93	3.47	0.62	Moderately
10.	uses intercom gadgets to communicate with the staff and the students in the school premise.	93	2.17	1.28	Seldomly
11.	ensures that photocopy machine is used for reproduction of documents.	93	3.49	0.86	Moderately
12.	uses printer machine for printing of documents.	93	3.52	0.79	To very large extent
13.	encourages the use of electronic library and books for teachers to see new teaching methods and research.	93	1.87	1.05	Seldomly
14.	encourages the use of overhead projectors for teaching and learning.	93	2.10	1.25	Seldomly
15.	uses scanning machine to scan documents.	93	2.42	1.90	Seldomly
16.	ensures that camera is used to cover school events when necessary e.g. sports, seminars, workshops and so on.	93	3.00	0.94	Moderately
17.	uses microphone/ public address system to communicate with the staff and the students during meetings and assemblies.	93	3.40	0.89	Moderately
18.	encourages the use of electronic board (smart or star board) for teaching and learning.	93	1.73	1.20	Seldomly
19.	uses the board (white, black, notice and bulletin board) to pass information on meetings, examination timetables and so on.	93	3.77	0.43	To very large extent
20.	encourages the students to use library for reading and studying.	93	3.61	0.51	To very large extent
<b>Overall assessment</b>			<b>2.87</b>	<b>0.93</b>	<b>Moderately</b>

The result in table 1 shows that the overall mean score for the level of ICT utilization by the principal in the management of FCT senior secondary schools was 2.87, which is greater than the 2.50 cut-off point. This study showed that the level of ICT utilization by the principals in the management of FCT senior secondary schools was moderate.

### 3.2 Hypothesis One:

Ho<sub>1</sub>: There is no significant difference between male and female principals' ICT utilization in FCT senior secondary schools.

**Table 2: Analysis of Male and Female Principals' ICT Utilization in FCT Senior Secondary Schools**

Group	N	Mean	SD	df	p-value	Decision
Male	54	2.06	0.94	91	0.092	Ho <sub>1</sub> Accepted
Female	39	1.78	0.83			

**Note:** df is degree of freedom i.e. N-2

Table 2 shows the t-test analysis of male and female principals' ICT utilization. The p-value of 0.092 is greater than 0.05(5%) significance level, which means that there is no significant difference between male and female principals' ICT utilization in FCT senior secondary schools. Thus, the hypothesis was accepted.

### 3.3 Hypothesis Two:

Ho<sub>2</sub>: There is no significant difference between experienced and inexperienced principals' ICT utilization in FCT senior secondary schools.

**Table 3: Analysis of Experienced and Inexperienced Principals' ICT Utilization in FCT Senior Secondary Schools**

Group	N	Mean	SD	df	p-value	Decision
Experienced	72	2.57	0.84	91	0.005	Ho <sub>2</sub> Rejected
Inexperienced	21	1.78	0.73			

**Note:** df is degree of freedom i.e. N-2

Table 3 shows the t-test analysis of experienced and inexperienced principals' ICT utilization. The p-value of 0.005 is less than 0.05(5%) significance level, which means that there is a significant difference between experienced and inexperienced principals' ICT utilization in FCT senior secondary schools. Thus, the hypothesis was rejected.

### 3.4 Hypothesis Three:

Ho<sub>3</sub>: There is no significant difference between principals' ICT utilization in public and private senior secondary schools in FCT.

**Table 4: Analysis of Principals' ICT Utilization in Public and Private Senior Secondary Schools in FCT**

Group	N	Mean	SD	df	p-value	Decision
Public	30	1.94	0.91	91	0.052	Ho <sub>3</sub> Accepted
Private	63	2.52	0.92			

**Note:** df is degree of freedom i.e. N-2

Table 4 shows the t-test analysis of principals' ICT utilization in public and private senior secondary schools in FCT. The p-value of 0.052 is greater than 0.05(5%) significance level, which means that there is no significant difference between principals' ICT utilization in public and private senior secondary schools in FCT. Therefore, the hypothesis was accepted.

### 3.5 Hypothesis Four:

Ho<sub>4</sub>: There is no significant relationship between principals' personal variables and ICT utilization in FCT senior secondary schools.

**Table 5: Correlation between Principals' Personal Variables and ICT Utilization in FCT Senior Secondary Schools**

Group	N	Mean	SD	df	r	p-value	Decision
Principals' Personal Variables	93	3.10	0.98	91	0.174	0.041	Ho <sub>3</sub> Rejected
ICT Utilization	93	3.47	0.87				

**Note:** df is degree of freedom i.e. N-2

Table 5 shows the correlation between principals' personal variables and ICT utilization. The p-value of

0.041 is less than 0.05(5%) significance level, which means that there is significant relationship between principals' personal variables and ICT utilization in FCT senior secondary schools. Therefore, the hypothesis was rejected.

## 5.0 Discussion of Findings

From the analysis of data, the result of the study from research question one showed that ICT resources were moderately utilized by the principals in the management of FCT senior secondary schools. On the other hand, the findings of this study contradict the findings of Adeyemi and Olaleye (2010) who reported that the usage of ICT equipment in the secondary schools was at a low level in Ekiti State. The findings of the study from hypothesis one revealed that both male and female principals utilized ICT resources in the school management when necessary but male principals (mean=2.06) used ICT resources better than the female principals (mean=1.79). This study is in agreement with Papaioannou and Charalambous (2011) that both male and female principals hold positive attitude towards ICT. However, the male principals had stronger positive attitudes than their female colleagues. In the result of hypothesis two, although, the mean score (2.58) of the experienced principals is higher than the mean score (1.79) of inexperienced principals but the study revealed that the principals with the lower years of working experience used ICT resources better than the principals with the higher years of working experience. This finding is in alignment with the findings of Papaioannou and Charalambous (2011) which stressed that young principals were more enthusiastic about ICT, felt less anxiety when using ICT and avoided using computer to a lesser degree than the older principals. On the other hand, the findings of this study contradict the findings of Felton (2006) that concluded that age does not play a significant role in determining educators' attitude towards computers.

From the results of hypothesis three, the principals in the private senior secondary schools (mean=2.52) utilized ICT resources better than the principals in the public senior secondary schools (mean=1.94). This is because most of the ICT resources were available in the private senior secondary schools than in the public senior secondary schools in FCT. The findings of this study supported the findings of Adeyemi and Olaleye (2010) that concluded that government is not fully ready to imbibe ICT for the effective management of secondary schools. In the result of hypothesis four, the calculated value of Pearson product-moment correlation ( $r$ ) was 0.174, which indicated that there is a positive relationship between principals' personal variables and ICT utilization in FCT senior secondary schools. This means that principals' personal variables of gender, experience and ownership of school could influence their utilization of ICT in the management of senior secondary schools in FCT. This finding agreed with Ogunshola (2009) who reported that effective school management depends to the large extent on effective use of ICT tools.

## 5.1 Conclusion

The principals should be able to initiate practical actions for relevant educational changes and innovations such as the integration and utilization of ICT into their administrative functions in order to achieve the school goals. Principals' personal variables are factors that determine the extent to which a principal is able to achieve the school goals. Therefore, the findings of the study have led the researcher to conclude that, principals' personal variables of gender, experience and ownership of school could influence their utilization of ICT in the management of senior secondary schools in FCT, Abuja, Nigeria.

## 5.2 Recommendations

Based on the findings of this study, the following recommendations were made:

1. Efforts should be made by the principals to upgrade their knowledge of ICT utilization for their daily tasks for effective management.
2. Government and non-governmental organisation should also help to improve the principals in the use of ICT resources through training, seminar and workshop.

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