

**ASSESSMENT OF THE USE OF INFORMATION AND COMMUNICATION
TECHNOLOGY (ICT) IN THE FINANCE AND PERSONNEL DIVISIONS
OF THE PUBLIC SERVICES IN ENUGU STATE**

BY

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Abstract

This study assessed the extent of use of information and communication technology (ICT) in the public services in Enugu State. The population of the study comprised of directors and heads of departments in the public services in Enugu State. A total of 46 of the population were surveyed to find out: (1) the extent of usage of ICT in the federal, state and local government finance divisions in Enugu State and (2) the extent of usage of ICT in the federal state and local government personnel divisions in the public in Enugu State. The survey utilized a structured questionnaire. Data collected were analysed using mean, standard deviation and ANOVA. The major findings were that, thirteen finance functions were often performed in both federal and state finance offices, thirteen finance functions were sometimes performed with the use of ICT in local government finance office, seven other finance functions were never performed with the use of ICT in the federal, state and local government finance offices, nine personnel functions were sometimes performed with the use of ICT in federal office. While four of the functions were sometimes performed with the use of ICT in the local government. Recommendation made was that the public services in Enugu State should adopt and implement the federal government policy on information technology which recommends a replacement of traditional work practices with electronic governance to maximize productivity and quality job practices.

Introduction

Information is generally perceived as data that have been processed into a meaningful and useful context. It involves the transmission and reception of knowledge. In modern organization, the buzzword is information and communication technology. Ononogbo (1999), Uzoigwe (2001) and Ogbonna (2003) maintained that information and communication technology implies all the technologies employed in order to facilitate the collection, storage and retrieval of information by the fastest possible means.

Information and communication technology (ICT) hold the key in most modern businesses. More comprehensive and accurate information can be received, stored, processed, retrieved and sent at a very fast rate. Okereke and Ndinechi (2005) defined information and communication technology as the scientific means and processes involved in obtaining, packaging and communicating information. They explain that information notifies surprises, stimulates, reduces uncertainties, reveals available options, influences individuals and expresses feeling among other roles. Information and communication technology is designed to acquire, analyze, synthesize, store and distribute appropriate information required by managers to perform their duties (Odiari 1997).

Conceptual Framework

The whole concept of Information and communication technology (ICT) revolves on how information and communication are manipulated. Ogbonna (2003) referred to it as a technology that has made positive impact in information generation, storage, retrieval and transmission.

Speaking on its importance, Bengeman (1995) reports that this technology now enables us to process, store, retrieve and communicate information in whatever form it may take, unconstrained by distance, time and revolution. These developments he reveals have been documented as the evolution of "knowledge societies", paperless societies, etc. Today information and communication technology points the way to development. The society today and the future is increasingly becoming an information society where information is the power and the ability to search and obtain needed information (Ogbonna, 2003).

Enugu State public service is an offshoot of the Federal Public Service Commission established in 1st October 1954, by Regulations made by the Governor-General under Section 177 of the Nigerian (Constitution) Order in Council 1954. According to the official Document NO 3 of 1973, the Government of former East Central State of Nigeria had been in the process of making and bringing communication to the doorsteps of the government offices. Shortly after the civil war, the then Government saw the necessity to allocate telephone services, Public Bureau exchange (P.B.X) etc through the Ministry of Establishment. Special attention was paid to the reactivation of Public Bureau exchange (PBX) systems damaged during the war. All these were attempts to make communication cheaper and easier for efficient and effective performance in government offices.

Today, inventions and technologies have extended the scene. The office environment has change and will continue to change due to innovations occasioned by the computer and more especially the internet.

In Enugu State Public Services, many new technologies have been adopted to replace the old ones. There are computers, Internet systems, E-mail services, Word processors, E-commerce, Fax machines among others. Most of these recent technological innovations have considerably altered the nature, content and the environment of business offices in Enugu State as against the traditional office practice of typewriting, shorthand and book-keeping. The need for this study arose as a result of the present trend of events in information system especially as it affects Enugu State public service.

The traditional practice in office routines placed emphasis on office practice of typewriting, shorthand and bookkeeping. The practice has of late come under criticism from academics and practitioners for its failure to capture important aspects of corporate performance in office practice as well as its inability to adjust to the new trend in office practice. Critics of traditional office practice advocate for the performance indicators that are aligned to the emergence of office practice which place emphasis on computers and internet systems. The main problem of this study is, despite the level of awareness placed on Information and communication technology (ICT) usage world-wide, most Nigerian public services, (Enugu State inclusive) are still lagging behind (Ohakwe 2000). The workers have remained ignorant and under developed. There are delays in information processing, lack of ICT competencies and lack of expertise in information handling. This has resulted to low performance and the inability of the system to urgently meet the demands of the public being served.

Most studies on ICT have mainly focused on large business organizations while scanty research evidence exists in public service (ministries). None of the literature which the present researcher was able to collect for this study sought to address this topic in the context of Nigerian public service. This literature gap establishes the need for this study.

Purpose of the Study

The main purpose of this study was to assess the extent of usage of information and communication technology (ICT) in the public services in Enugu State. Specifically the study sought to:

1. find out the extent of usage of information and communication technology (ITC) in carrying out finance functions of the federal, state and local government finance divisions in Enugu State.
2. find out the extent of usage of ICT in carrying out personnel functions of the Federal, state and local government personnel divisions in the public services in Enugu State.

Research Questions

This study sought answers to the followings research questions:

1. To what extent is information and communication technology (ICT) used in carrying out finance functions in the federal, state and local government finance divisions of the public services in Enugu State?
2. To what extent is ICT used in carrying out personnel functions in the personnel divisions of the public services in Enugu State?

Hypotheses

The following null hypotheses were formulated and tested at 0.05 level of significance.

1. The extent of usage of ICT in carrying out finance functions in public service in Enugu State does not differ significantly among the federal, state and local government public services in Enugu State.
2. There is be no significant difference among the federal, state and local government personnel divisions in carrying out personnel functions in Enugu State public service.

Methodology

Population

The population of this study consisted of all the heads and directors from the ministries and departments of public services under study in Enugu State. The total population of the study was made up of forty six (46) heads and directors of departments from the ministries and departments. For example federal finance =11 department = 11 officers, state finance = 10 department =10 officers, local government finance = 6 department = 6 officers. Then federal personnel = 3 departments = 3 officers, state personnel = 6 department = 6 officers, then local government personnel = 10 department =10 officers. There was no sampling. The entire population was used for the study.

Instrument

The instrument for data collection was a four-point structured questionnaire. Forty six copies of the questionnaire were distributed and all were returned, which represents a 100% return rate. The high response rate was as a result of the adoption of drop-and-pick method. Items were formulated to address the research questions. The instrument was divided into sections. Section A contains personal data of the respondents, Section B contains instruction on how to complete the research instrument which contains twenty-nine (29) items for the Federal, State and Local Government Ministries of finance and establishment (personnel) in Enugu State public service. Section C was on financial functions containing items 1-20 while section C₂ was on personnel functions containing items 21-29. These items were measured on a scale ranging from 1 = Never (indicating that such function was never performed with the use of Information and Communication Technology (ICT) to 4 = Very often indicating that such function was very often performed with the use of ICT. For finance functions, the

respondents were expected to respond to the following options. Different finance functions where ICT was utilized are: preparing salary accounts, budgetary account, cashbook entries etc. Also different personnel functions where ICT was used are: providing access to personnel information in the whole organization, preparing performance appraisal etc. The respondents are therefore required to indicate how often ICT was used in performing these finance and personnel functions in their departments.

Any function that scores a mean of 1.00 to 1.99 was regarded as never performed with the use of ICT. Any function that scores a mean of 2.00 to 2.99 was regarded as being sometimes performed with the use of ICT. Also a function that score a mean of 3.00 to 3.99 was regarded as being often performed with the use of ICT whereas a function that scores a mean of 4.00 and above was accepted as being very often performed with the use of ICT.

Boundary Limit	Rating Point	Response Option
1.00 – 1.49	1	Never (N)
1.50 – 2.49	2	Sometimes (ST)
2.50 – 3.49	3	Often (O)
3.50 - 4.00	4	Very Often (VO)

A null hypothesis was accepted if the calculated F – Ratio is less than the critical value of F, while a null hypothesis is rejected if the calculated value of F is greater than F - critical value.

Analysis

The data generated from the study were analyzed using arithmetic mean and standard deviation. The mean was used to answer the two research questions while Analysis of variance (ANOVA) statistics at 0.05 level of significance was used to test the two null hypotheses. All analysis was executed using the SPSS computer package.

Result

Data collected in respect of first research question are shown in Table 1 below.

Table I: Respondents' Mean Rating of the Extent of Usage of ICT in carrying out Finance Functions in the Public Services in Enugu State (N = 46)

S/N	Finance Functions	X1	SD1	X2	SD2	X3	SD3	GX	GSD	Rmks
1.	Preparing cashbook entries	3.09	1.04	3.38	.92	2.56	1.42	3.01	1.12	O
2.	Preparing trial balance	3.09	1.04	3.50	.93	2.56	1.42	3.03	1.13	O
3.	Calculating discounts	1.00	.00	1.13	.35	1.00	.00	1.04	0.11	N
4.	Making journal entries	3.36	1.03	3.63	.74	2.56	1.42	3.18	1.06	O
5.	Balancing daily cash	1.00	.00	1.38	1.06	1.00	.00	1.12	0.35	N
6.	Preparing financial statements	3.18	1.25	3.13	1.13	2.33	1.41	2.88	1.26	ST
7.	Preparing income & expenditure accounts	3.09	1.04	3.50	.76	2.33	1.41	2.97	1.07	ST
8.	Preparing budgetary accounts	3.45	1.04	3.50	.76	2.22	1.30	3.05	1.03	O
9.	Recording accounts receivable	3.09	1.04	3.25	.89	2.56	1.51	2.96	1.14	ST
10.	Recording accounts payable	3.09	1.04	3.50	.76	2.11	1.27	2.90	1.02	ST
11.	Preparing payrolls	3.45	1.04	3.75	.71	2.67	1.22	3.29	0.99	O
12.	Preparing paychecks & payrolls reports	3.36	1.03	3.63	.74	2.22	1.09	3.07	0.95	O
13.	Preparing salary accounts	3.09	1.04	3.75	.71	2.56	1.51	3.13	1.08	O
14.	Preparing profit & Loss accounts.	1.27	.90	1.50	1.07	1.00	.00	1.25	0.65	N
15.	Preparing assets & liability accounts	3.27	1.01	3.38	.92	2.33	1.41	2.99	1.11	ST

16.	Preparing & keeping records of financial planning	3.27	1.10	3.38	.74	2.11	1.27	2.92	1.03	ST
17.	Preparing bills and invoices	1.00	.00	1.38	1.06	1.00	.00	1.12	0.35	N
18.	Keeping track of cash receipts	1.00	.00	1.13	.35	1.00	.00	1.4	0.11	N
19.	Examining and sorting of business papers	1.00	.00	1.25	.71	1.00	.00	1.08	0.23	N
20.	Analyzing business papers and records	1.00	.00	1.13	.35	1.00	.00	1.04	0.11	N

Note: VO - Very Often, O - Often, ST - Sometimes and N - Never

The above table presents the mean responses and standard deviations of the Federal, State and Local Government heads of departments of the ministries of finance of the public services in Enugu State. From the analysis, it is shown that preparing budgetary accounts, payrolls, paychecks, salary accounts, journal entries, cashbook entries and trial balance are often performed with the used of ICT because they had means ranging from 2.50 - 3.49 while preparing for financial statements, income and expenditure accounts, and keeping records of financial planning are sometimes performed with the use of ICT since they had means ranging from 1.50 - 2.49. However, calculating discounts, balancing daily cash, profit and loss accounts, bills and invoices, cash receipts, analyzing and sorting of business papers and records were never performed with the used of ICT since they had means ranging from 1.00 - 1.49 which indicated that such functions were never performed with the use of ICT in the public service.

Data collected in respect of research question II are shown in Table II below.

Table II: Respondents' Mean Rating of the Extent of Usage of ICT in carrying out Personnel Functions in the Public Service (N = 46)

S/N	Personnel Functions	X1	SD1	X2	SD2	X3	SD3	GX	GSD	Rmks
21.	Providing access to personnel information in the whole organisation	2.22	1.30	2.71	1.38	1.30	.95	2.07	1.21	ST
22.	Keeping records of recruitment, selection, hiring and employment	2.11	1.27	2.00	1.00	1.00	.00	1.70	0.75	ST
23.	Keeping records of job placement	2.33	1.41	1.86	1.07	1.00	.00	1.73	0.73	ST
24.	Preparing performance appraisal	2.33	1.41	1.86	1.07	1.30	.95	1.83	1.14	ST
25.	Arranging for employee benefit analysis	2.11	1.27	1.71	1.11	1.30	.95	1.70	1.11	ST
26.	Arranging for training and development	2.67	1.22	2.71	1.38	1.00	.00	2.12	0.86	ST
27.	Keeping records of job descriptions	2.56	1.42	2.00	1.41	1.30	.95	1.95	1.26	ST
28.	Preparing and keeping records of promotions	2.22	1.09	2.00	1.41	1.00	.00	1.74	0.83	ST
29.	Arranging for flow of information in organization	2.56	1.51	2.00	1.15	1.30	.95	1.95	1.20	ST

Note: VO - Very Often, O - Often, St - Sometimes and N - Never

The data in Table 2 above reveal the mean responses of the Federal, State and Local Government heads of departments from the Personnel divisions of Enugu State public

services. The result revealed that the respondents sometimes performed those nine functions with the use of ICT in the federal office but items 21, 22 and 26 -29 indicated that those functions were sometimes performed with the use of ICT in the state offices because they had means ranging from 1.50 - 2.49. Consequently none of those functions was performed with the use of ICT in the local government offices.

Table 3: Result of One-way ANOVA Difference among the Mean Ratings of Federal, State and Local Government Officers on the Extents of Usage of ICT in performing finance functions.

Variable MSC

By Variable Ministry

Analysis of variance						
Source of	DF	Sum of	Mean	F-Ratio	F-Prob	Variation
Squares		Square				
Between Group	2	5.0709	1.2677	9.8345	.0000	
Within Group	43	125039	.1289			
Total	45	17.5749				

One way

Variance MSC

By Variable Ministry

Multiple Range Test: Scheffe test with significance level 0.5

The difference between two means is significance if $MEAN(J) - MEAN(1) = .2539$

Range $SQRT(1/N(1) + 1/N(J))$ with the following value (s) for RANGE: 4: 41.

(*) indicates significant differences which are shown in the lower triangle.

G	G	G
r	r	r
p	p	p
3	1	2

Means Ministry

1.906	Grp	3	-	Local Government finance department
2.4575	Grp	1	-	Federal finance department
2.709	Grp	2	-	State finance department

Homogeneous subjects (highest and lowest means are not significantly different)

Subset 1

Group	Grp3	Group 1
Mean	1.906	2.4575

Subset 2

Group	Grp 2
Mean	2.709

The output displays between and within group sums of squares as well as the f- value with its probability. The f - value shows that there is a significant difference in the means of Federal, State and Local Government heads in the usage of ICT in carrying out finance functions. An indication of significant difference alone is deficient since it does not reveal the direction of the difference.

To obtain this information, a post hoc comparison was carried out using scheffe test. The result shows that ICT is mostly used by ministry 2 (state finance) in carrying out finance functions. This is because it is significantly different from others. A closer examination of the means shows that while ministry 2 had a value of 2.709, others have means of 1.906 and

2.4575 for ministry 3 (local government finance) and 1 (federal finance) respectively. This result puts ministry 2 alone in subset 2 while others are in subset 1. Usually homogeneous groups are classified under the same subset.

Table 4: Result of One-way ANOVA Difference among the Mean Ratings of Federal, State and Local Government Personnel Officers on the Usage of ICT in carrying out Personnel functions.

By Variable Ministry

Analysis of variance

Source of Variation	DF Squares	Sum of Square	Mean	F-Ratio	F-Prob
Between Groups	2	.5301	.2651	1.5395	.2196
Within Group	43	17.0448	.1722		
Total	45	17.5749			

One way

Variance MSC

By Variable Level

Multiple Range Test: Scheffe test with significance level 0.5

The difference between two means is significance if $MEAN(I) - MEAN(2) = .2934 \text{ RANGE} \sqrt{\frac{1}{N}(1) + \frac{1}{N}(2)}$ with the following value (s) for RANGE: 3 : 51.

(*) indicates significant differences which are shown in the lower triangle.

G	G	G	r	r	r
p	p	p	3	2	1

Means

Level

1.16666	Grp	3	-	Local Government Personnel
2.09444	Grp	2	-	State Personnel
2.34556	Grp	1	-	Federal Personnel

Homogeneous subjects (highest and lowest means are not significantly different)

Subset 1

Group	Grp3	Group 2
Mean	1.16666	2.09444

Subset 2

Group	Grp 1
Mean	2.34556

The output displays between and within group sums of squares and the f-value with its probability. The f-value reveals that there is significant difference in the means of Federal, State and Local Government responses on the usage of ICT in performing personnel functions in the public service.

To show the direction of the difference, a post hoc comparison was carried out using scheffe test. The result shows that ICT is mostly used by group I which is the federal personnel in carrying our personnel functions in Enugu State public service. This is because group I is significantly different from others. A closer examination of the means shows that while group I (Federal personnel) had a mean value of 2.34556, group 2 (State personnel) had a mean 2.09444 whereas group 3 (Local Government) had a mean of 1.16666. This result therefore puts group 1 (federal personnel) alone in subset 2 while others are in subset I. Usually homogeneous groups are classified under the same subset.

Findings

Data collected in respect of the first research question as shown in Table 1 indicated that while the respondents often use ICT in performing thirteen finance functions in the federal and state offices, ICT is sometimes used in performing such similar functions in local government offices. This interpretation, is based on the fact that the mean responses of the respondents to questionnaire items (1, 2, 4, 6-13 and 15 -16) fell between the mean category of 3.00 - 3.99 which is '3' signifying "often" in the federal and state finance offices.

Consequently items (1, 2, 4, 6 - 13 and 15 - 16) fell between the mean categories of 2.00 - 2.99 which is '2' signifying 'sometimes' thereby indicating that the respondents sometimes utilize ICT in performing such finance functions in local government offices, as can be seen in the table above.

However, the seven remaining items had mean categories ranging from 1.00 - 1.49 which is '1' signifying 'Never' indicating that those functions were never performed in federal, state and local government offices with the use of ICT.

Data collected in respect of the second research question as shown in Table 2 revealed that the respondents sometimes use ICT in performing nine personnel functions in the federal offices. This is because the mean categories of those items fell between 1.50 - 2.49 which is '2' signifying sometimes. Also in state office the data revealed that items (21, 22 and 26 - 29) are sometimes performed with the use of ICT.

None of the functions was performed with the use of ICT in local government offices. This is because the items had means ranging from 1.00 - 1.49 which '1' signifying 'Never'.

The null hypothesis which states that the extent of usage of ICT in carrying out finance functions would not differ significantly among the federal, state and local government finance officers is rejected because with F. Ratio (9.8345) greater than F. Prob (.0000) at 0.05 level of significance, this means there were significance difference in the ratings of federal, state and local government heads of the department on the usage of ICT in performing finance functions. A post hoc test was carried out to find the location of difference (see Table 3 and 4).

Discussion

The results of this study provided some useful insights and information on the extent of ICT usage in Enugu State public service. The first research question sought to find out the extent of ICT usage in carrying out finance functions in the federal, state and local government finance division in Enugu state public service. Data analyzed relative to this research question revealed that finance functions were often performed with the use of ICT in both federal and state finance offices while the similar functions were sometimes performed with the use of ICT in local government finance offices.

Also the second research questions sought to find out the extent of ICT usage in carrying out personnel functions in federal, state and local government personnel divisions of the public service. Data relative to this question revealed that the respondents sometimes performed those nine functions with the use of ICT in the federal office, however items 21, 22 and 26 -29 were also performed with the use of ICT in the state offices. Consequently none of those functions was performed with the use of ICT in the local government offices.

By this analysis, it is imperative to state that Enugu State public service is still lagging behind, because this archaic means of conveying office work in the public service as revealed by this study is quite contrarily to the present day office practice. Ohakwe (2000) commenting on this situation stated that many traditional record practices have become grossly inadequate in today's office. Eze (2000) warned that any office practice of today that is lacking in information and communication technology would be boring, repetitive and would produce very little indeed.

Conclusion

Based on the findings of the study, it is imperative to state that the extent of ICT usage in the finance and personnel divisions of Enugu State public services is still very low. This is still in agreement with Ahukanna (2000) and Akpore (2001) who postulate that the dying decades of the century had witnessed tremendous awareness in ICT yet many offices in Enugu State public service had remain at zero level even as at date. A visit to both government and private offices reveal this status quo and this calls for serious concern.

Recommendations

Based on the above findings and conclusions, the following recommendations are made:

1. Orientation should be given to the public service personnel on the need for ICT in their various offices and ministries. This could be done from time to time in form of seminars and workshops.
2. Increased investment should be made in the acquisition of the latest information technology in all the public service offices in Enugu State.
3. Enugu State public service should adopt and implement the federal government policy on information and communication technology which recommends a replacement of traditional work practices with electronic governance to maximize productivity and quality job practices, (Federal Government Official Document 2001).

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