

**INFORMATION AND COMMUNICATION TECHNOLOGY UTILIZATION FOR  
WAGES AND SALARY ADMINISTRATION IN COLLEGES OF EDUCATION  
IN ENUGU STATE**

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**Abstract**

*The main purpose of this study was to compare the extent to which Information and Communication Technology is utilized for wages and salary administration in colleges of education in Enugu state. Design adopted for the study was descriptive survey design. Six research questions and six hypotheses guided the study. Area of the study was Enugu state of Nigeria. Population of the study consisted of all the 698 secondary school principals in Enugu state as at the time of the study. The population was made up of 263 staff of public colleges of education and 118 staff of private colleges of education. Sample for this study was 331 respondents 228 from public and 103 from private colleges of education. A 120-item structured questionnaire titled Questionnaire on Extent of Utilization of Information and Communication Technology for Personnel Management in Colleges of Education in Enugu state (QEICTPMCE) was used for data collection. The questionnaire was validated by three research experts. The overall reliability coefficient value for the instrument was .67 obtained through Cronbach's Alpha Method. Mean and standard deviation were used to answer the research questions while z-test statistic was used to test the hypotheses at 0.05 significant level. Consequent upon the findings made in this study, it was concluded herein that Information and Communication Technology is well utilized by administrators of public and private colleges of education in Enugu state for staff recruitment and wages/salary administration. Whereas ICT is utilized poorly by the administrators for staff training, staff performance appraisal, staff welfare and industrial relations. Consequently, it was recommended among other things that administrators of public and private colleges of education should continue to utilize Information and Communication Technology for recruitment of staff.*

*Also, administrators of private colleges of education should increase their utilization of Information and Communication Technology for wages/salary administration to meet up with their counterparts in public colleges.*

### **Introduction**

Tertiary staff evidently are not paid wages and salary by the administrators. As a matter of fact, the administrators and other staff are serving one and same employer. But the administrators, as personnel managers, are tasked with ensuring that staff are paid all wages, salaries and entitlements as and when due. This may be in form of salary, fringe benefits, personal emoluments, retirement benefits, pensional allowances, welfare packages and so on. Amusan (2018) noted that efficient wages and salary administration is a veritable tool for attracting workers, retaining the good and productive ones, as well as motivating them for higher productivity.

Similarly, Kreks (2017) asserted that wages and salary administration consisted of all processes of control of salary cost, provision of a systematic determination of equitable compensation for the workers and promotion of employee-employer's relation through motivation of staff to enable them to perform at an optimum level with the provision of financial incentives. Otto (2017) outlined four major or a good salary structure as follows; the job rate which relates to the importance attached to the job; payments associated with encouraging the employees or groups by rewarding them according to their performance; personal or special allowances associated with such factors as scarcity or particular skills or categories of employees, long service; fringe benefits such as holidays with pay, pensions and so on.

The goals of salary administration as stated by Davidson (2017) include but not limited to:

- i. Provision of a systematic, determination of equitable compensation for the workers;
- ii. Control of salary costs by the organization;
- iii. Reduction in staff turn-over;

- iv. Motivation of staff to enable them to perform at an optimum level with the provision of financial and non-financial incentives; and
- v. Promotion of employee-employer's relations

As a personnel manager, the administrators should ensure that these goals of salary administration are achieved with effective wages and salary administration, productivity will improve, labor conflicts will be minimized and the overall objectives of the school shall be achieved. At the center of any educational level is the teacher. The Federal Republic of Nigeria (FRN) may have realized this truth. Hence, in the National policy on education, it is strategically stated that in recognition of the pivotal role of quality teachers in the provision of quality education at all levels, teacher education shall continue to be emphasized in educational planning and development, (FRN, 2013). In Nigerian educational system, the minimum qualification for entry into the teaching profession is the Nigeria Certificate in Education (NCE).

This minimum qualification (NCE) is mainly awarded by Colleges of Education. Colleges of Education are charged with the responsibility of training and retraining teachers designed to handle teaching at the very foundational level (Basic Educational Level). It therefore follows that Colleges of Education deserve adequate, if not most adequate attention by all and sundry. This is because if the foundational level of education cracks due to poor teacher education, the entire system is bound to collapse. Ikechi (2017) observed that Nigerian Colleges of Education are faced with many challenges such as, lack of infrastructures, lack of instructional facilities, poor funding, inadequate care personnel, etc. Ikechi hinted that in trying to meet the needs of Colleges of Education, care for personnel which can be handled by good personnel management should be prime and most important.

Zeph (2018) averred that optimal-success in wages and salary administration can be achieved through utilization of Information and Communication Technology (ICT). According to King (2020) Information and Communication Technology involves the use of electronic devices to extract raw data, process the data to produce information and to distribute (communicate) the information in order to meet human needs or purposes. Similarly, Samuelson (2018) held that Information and Communication Technology includes all systems or technologies for processing information in texts; data image and voice form as well as all local and international telecommunication networks. Information and Communication Technology therefore simply implies the application of science to information handling (Ukeme, 2019). In view of the new technologies of this information age, education is experiencing a shift from formal, centralized and segmented operations to increasingly complex, decentralized and integrated levels of organization, (King, 2020).

Interestingly, (FRN 2013) stated that teacher education programmes shall be structured to equip teachers for the effective performance of their duties, hence, Information Technology (IT) training shall be incorporated into all teacher-training programmes. Unfortunately, research evidences have shown conflicting findings on utilization of ICT for wages and salary administration in colleges of education. This gap is enough to necessitate further investigations. Thus, this study which is on utilization of Information and Communication Technology for wages and salary administration in colleges of education in Enugu state is, mostly vital and timely.

### **Purpose of the Study**

The main purpose of this study was to ascertain the extent to which Information and Communication Technology is utilized for wages and salary administration in colleges of education in Enugu state.

## **Research Questions**

The following research questions guided the study;

1. What is the extent to which Information and Communication Technology is utilized for wages administration in public and private colleges of education in Enugu state?
2. What is the extent to which Information and Communication Technology is utilized for salary administration in public and private colleges of education in Enugu state?

## **Hypotheses**

The following hypothesis were tested at 0.05 level of significance;

1. The extent to which Information and Communication Technology is utilized for wages administration in public and private colleges of education in Enugu state do not differ significantly.
2. The extent to which Information and Communication Technology is utilized for salary administration in public and private colleges of education in Enugu state do not differ significantly.

## **Methodology**

The main purpose of this study was to compare the extent to which Information and Communication Technology is utilized for personnel management in colleges of education in Enugu state. Design adopted for the study was descriptive survey design. Six research questions and six hypotheses guided the study. Area of the study was Enugu state of Nigeria. Population of the study consisted of all the 698 secondary school principals in Enugu state as at the time of the study. The population was made up of 263 staff of public colleges of education and 118 staff of private colleges of education. Sample for this study was 331 respondents 228 from public and 103 from private colleges of education. A 120-item structured questionnaire titled Questionnaire on

Extent of Utilization of Information and Communication Technology for Personnel Management in Colleges of Education in Enugu state (QEICTPMCE) was used for data collection. The questionnaire was validated by three research experts. The overall reliability coefficient value for the instrument was .67 obtained through Cronbach’s Alpha Method. Mean and standard deviation were used to answer the research questions while z-test statistic was used to test the hypotheses at 0.05 significant level.

**Results**

**Research Question 1**

What is the extent to which Information and Communication Technology is utilized for wages administration in public and private colleges of education in Enugu state?

**Table 1: Mean and standard deviation of responses on research question 4**

S/N	What is the extent of application of the under-listed ICT facilities for effective equipment of staff in your college?	Public			Private			Overall		
		$\bar{x}$	SD	Rmk	$\bar{x}$	SD	Rmk	$\bar{x}$	SD	Rmk
1	Word processors	3.61	0.35	VHE	2.88	0.13	HE	3.25	0.21	HE
2	Utility packages	3.50	0.14	VHE	2.95	0.95	HE	3.23	0.04	HE
3	Presentation packages	3.71	0.09	VHE	3.05	0.93	HE	3.38	0.34	HE
4	Off-line computer spreadsheets	3.52	0.15	VHE	3.33	0.91	HE	3.43	0.13	HE
5	Web-based spreadsheets	3.66	0.98	VHE	2.95	0.04	HE	3.31	0.25	HE
6	Open source spreadsheets	3.71	0.85	VHE	3.00	0.44	HE	3.36	0.23	HE
7	Archivers	3.59	0.99	VHE	2.93	0.35	HE	3.26	0.11	HE
8	Wide Area Networks (WAN)	3.70	0.26	VHE	3.22	0.35	HE	3.46	0.25	HE
9	Local Area Networks (LAN)	3.64	0.95	VHE	2.79	0.14	HE	3.22	0.05	HE
10	Backup softwares	3.58	0.14	VHE	2.63	0.09	HE	3.11	0.29	HE
11	File managers	3.68	0.75	VHE	2.90	0.43	HE	3.29	0.11	HE

12	Cryptographic	3.77	0.51	VHE	3.16	0.43	HE	3.47	0.18	HE
<b>GRAND</b>		<b>3.64</b>	<b>0.51</b>	<b>VHE</b>	<b>3.00</b>	<b>0.43</b>	<b>HE</b>	<b>3.31</b>	<b>0.18</b>	<b>HE</b>

From table 1, the grand means for public and private were 3.64 and 3.00 respectively while the overall grand mean was 3.31. This result indicates that the staff of public colleges of education in Enugu state utilized ICT for wages administration to a very high extent while staff of private colleges of education in Enugu state utilized ICT for wages administration to a high extent. When treated jointly, the overall grand mean (3.31) indicates that ICT is utilized in colleges of education in Enugu state for wages administration in Enugu state to a high extent. Also, the standard deviation values 0.51 for public, 0.43 for private and 0.18 for overall were low, indicating that there were little or no extreme values. Hence, the mean values so obtained represented the actual views of the whole respondents in each group.

**Research Question 2**

What is the extent to which Information and Communication Technology is utilized for salary administration in public and private colleges of education in Enugu state?

**Table 2: Mean and standard deviation of responses on research question 3**

S/N	What is the extent of application of the under-listed ICT facilities for effective equipment of staff in your college?	Public			Private			Overall		
		$\bar{x}$	SD	Rmk	$\bar{x}$	SD	Rmk	$\bar{x}$	SD	Rmk
13	Word processors	3.80	0.35	VHE	2.90	0.15	HE	3.85	0.15	LE
14	Utility packages	3.14	0.11	HE	2.99	0.06	HE	3.07	0.99	LE
15	Presentation packages	3.70	0.19	VHE	3.18	0.12	HE	3.04	0.26	LE
16	Computer spreadsheets	3.60	0.15	VHE	3.00	0.38	HE	3.00	0.25	LE
17	Programming languages	3.54	0.12	VHE	2.88	0.15	HE	3.91	0.14	LE
18	Web browsers	3.21	0.38	HE	3.30	0.06	HE	3.26	0.15	LE
19	Virtual reality applications	3.65	0.15	VHE	2.80	0.12	HE	3.73	0.35	LE

20	Wide Area Networks (WAN)	3.45	0.06	HE	2.79	0.38	HE	3.90	0.14	LE
21	Local Area Networks (LAN)	3.99	0.12	VHE	3.04	0.05	HE	3.02	0.09	LE
22	System security applications	3.31	0.06	HE	3.16	0.29	HE	3.24	0.15	LE
23	System profilers	3.80	0.16	VHE	3.21	0.11	HE	2.85	0.08	LE
<b>GRAND</b>		<b>3.56</b>	<b>0.17</b>	<b>VHE</b>	<b>3.02</b>	<b>0.17</b>	<b>HE</b>	<b>3.35</b>	<b>0.25</b>	<b>HE</b>

From table 2, the grand means for public and private were 3.56 and 3.02 respectively while the overall grand mean was 3.35. This result indicates that the staff of public colleges of education in Enugu state utilized ICT for wages administration to a very high extent while staff of private colleges of education in Enugu state utilized ICT for salary administration to a high extent. When treated jointly, the overall grand mean (3.35) indicates that ICT is utilized in colleges of education in Enugu state for salary administration in Enugu state to a high extent. Also, the standard deviation values 0.17 for public, 0.17 for private and 0.25 for overall were low, indicating that there were little or no extreme values. Hence, the mean values so obtained represented the actual views of the whole respondents in each group.

### Hypothesis 1

The extent to which Information and Communication Technology is utilized for wages administration in public and private colleges of education in Enugu state do not differ significantly.

**Table 3: z-test analyses for hypothesis 1**

Group	n	$\bar{x}$	SD	z-calculated	z-critical	Remark
<b>Public</b>	228	3.64	0.51	2.11	1.96	Significant (Reject hypothesis)
<b>Private</b>	103	3.00	0.43			



From table 3, z-calculated is 2.11 which is greater than the z-critical (1.96). Hence, hypothesis one is rejected as stated implying that there is significant difference on the extent to which Information and Communication Technology is utilized for wages administration in public and private colleges of education in Enugu state.

### Hypothesis 2

The extent to which Information and Communication Technology is utilized for salary administration in public and private colleges of education in Enugu state do not differ significantly.

**Table 4: z-test analyses for hypothesis 2**

Group	n	$\bar{x}$	SD	z-calculated	z-critical	Remark
Public	228	3.56	0.17	2.54	1.96	Significant (Reject hypothesis)
Private	103	3.02	0.17			

From table 4, z-calculated is 2.11 which is greater than the z-critical (1.96). Therefore, hypothesis two is rejected as stated because there is significant difference on the extent to which Information and Communication Technology is utilized for salary administration in public and private colleges of education in Enugu state.

### Summary of Findings

Based on the ratings of the respondents, the findings of this study can be summarized thus;

1. The extent of utilization of Information and Communication Technology for wages administration were very high for public and high for private colleges of education in Enugu state.

2. The extent of utilization of Information and Communication Technology for salary administration were very high for public and high for private colleges of education in Enugu state.

### **Discussion of the Findings**

It was found in this study that the staff of public colleges of education in Enugu state utilized ICT for wages/salary administration to a very high extent while staff of private colleges of education in Enugu state utilized ICT for wages/salary administration to a high extent. When treated jointly, ICT is utilized in colleges of education in Enugu state for wages/salary administration in Enugu state to a high extent. This finding supports the findings of Nduka (2016), Zeph (2018), Tiz (2019), Clerk (2020), King (2020), Gev (2020) and Hung (2020) who found in their individual works ICT was utilized by college administrators for wages/salary administration to a high extent. Contrarily, the finding disagrees with the finding of Ogbonna (2019) who found that ICT was utilized by college administrators for wages/salary administration to a low extent.

With the advent of internet banking and the consequent cashless economy, it becomes expedient that monetary transactions be based on ICT. What is vogue today in the public sector is single treasury account which is ICT based. With this, many fraudulent act have been thwarted. These fraudulent acts include; ghost walker's syndrome, deliberate and mischievous calculations, overpayment, salary padding, formed leakages and many others. It is therefore not surprising that public colleges of education apply ICT to a very high extent in wages and salary administration. In the same vein, the private colleges, with their meager and scarce financial resources will cherish ICT utilization for wages and salary administration so as to check excesses and leakages.

## **Conclusions**

Consequent upon the findings made in this study, it is concluded herein that Information and Communication Technology is well utilized by administrators of public and private colleges of education in Enugu state for staff recruitment and wages/salary administration. Whereas ICT is utilized poorly by the administrators for staff training, staff performance appraisal, staff welfare and industrial relations.

## **Recommendations**

From the findings of this study, the following recommendations are deemed necessary:

1. Administrators of public and private colleges of education should continue to utilize Information and Communication Technology for wages and salary administration.
2. Administrators of public and private colleges of education should improve in their utilization of Information and Communication Technology for wages and salary administration.
3. Administrators of private colleges of education should increase their utilization of Information and Communication Technology for wages/salary administration to meet up with their counterparts in public colleges.

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