



CARITAS UNIVERSITY AMORJI-NIKE, EMENE, ENUGU STATE

Caritas Journal of Physical and Life Sciences

CJPLS, Volume 4, Issue 1 (2025)

Article History: Received: 12th April, 2025 Revised: 23rd June, 2025 Accepted: 10th July, 2025

IMPACT OF INFORMATION MANAGEMENT ON THE PERFORMANCE OF TELECOMMUNICATION INDUSTRY IN EBONYI STATE NIGERIA

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Abstract

This study investigated the effect of information management on the performance of telecommunication industry by examining and ascertaining the adoption on new Information Management and quality of service delivery. A survey designed was adopted on new Information Management on quality of service delivery. A total of 189 were studied. The entire sample size wasn't much, so the researcher decided to use the entire population as the sample size. Data collected was through questionnaire structured on Likert's point scale. While the supervisor and two (2) research experts carried a face to face and content. The reliability coefficient of the instrument was 0.89 using the text pretext method and validation of the instrument. Table and percentages were employed for data presentation and analysis. Hypotheses were tested using Pearson product moment correlation coefficient with 0.05% level of significant to determine the strength of the relationship between the variables. The findings are the following; ICT has a significant positive effect on organization performance: by reducing cost, improving skills essentials for the survival and growth of the organization in today's turbulent and competitive business environment. Organization should build the human capacity and infrastructure needed for the utilization of the acquired ICT.

Keywords: *Communication, Information, Management, Industry, Telecommunication.*

Introduction

During the last decade, there has been a rapid development in the use of Information and Communication Technology (ICT) in many organizations. ICT plays a crucial role in the present knowledge based economy, hence, organizations tend to rely heavily on ICT solution in order to develop and grow their business Asgaikhani and Young,(2010). The revolution in the use of ICT over the years has profound implications for economics and social development and has pervaded every aspect of human life Shanker, (2008). The use of ICT is widespread and regarded as an essential tool for the efficient administration of any organization in the delivery of service to clients. Schware (2003), states that ICTs in recent times are being integrated in to procedures, structures, and products throughout businesses, governments and communities. The use of ICT increases the supply of information as ICT plays a key role in information sharing and dissemination ICT removes distance and time constraint in accessing required information flow. ICT also reduces the cost of production as knowledge is produced, transmitted, accessed and share at the minimum cost. There is a reduction

in the degree of inefficiencies and uncertainty with the use of ICT because it enables businesses to interact more efficiently Buhalis, (2003).

Shanker (2008) asserts that the use of ICT in many organizations has assisted in reducing transactional cost, overcome the constraints of distance and have cut across geographic divides, thereby helping to improve coordination o activities within the organizational boundaries. Avgeron and Ciborra (2004) opine that, Information and communication technology plays a role when people try to overcome the limitation of time and distance to communicate, exchange information and work together. Bilghan, Okumus, Nusair, and Khun (2011) however, emphasized further that, information is the output element of data processing activity. It is the conversion of data processing operation into a useful form for its purpose.

Another major problem posed by on adoption of ICT is the misplacement/displacement of information, which has generally led to completion of task as required and on time. Based on the afore mentioned problems engendered by non or inadequate adoption and utilization of ICT, this work tends to x-ray inaptly, with a view of critically investigating these problems, its effect cum relationships, proffer solutions and adding more knowledge to existing literature.

Objectives of the Study

The main objective of the study was to examine information management on performance of telecommunication industry in Ebonyi State Nigeria, specifically in Abakaliki metropolis of Ebonyi State. Other specific objective includes:

- To investigate the effects of information management performance on performance of Telecommunication in Ebonyi State Nigeria.
- To examine the effects of information management on performance of Telecommunication in Ebonyi State Nigeria.

Research Hypothesis

Hi: The adoption of ICT has significant effect on cost reduction in telecommunication industry.

Hi: The adoption of ICT has significant effect on the improvement of workers skills in telecommunication industry.

Review of Related Literature

Conceptual Framework

Information and communication technology (ICT) is an external term for information technology (IT) that stresses the role of unified communications and the integration of telecommunication (telephone lines and wireless signals) and computers as well as necessary enterprise software, middle ware, storage and to visual system, that enables users to access, store, transmit and receive information electronically in a digital form.

ICT ensures management of information and information systems strategies, this means that it covers how data is captured, verified and store for effective use. (Murray 2011). Milis and Merken (2003) states that IT is a common term that describes any technology that helps to create, influence, process accumulated correspond and/ or distribute information. IMT enhances employee output which is turn leads to accelerated organizational performance. IMT contributes to performance by: Changing the nature of organizational boundaries and the time at which work take place and Altering the nature and pace of work. Murray (2011) further opines that managers measure and control organizational performance because it leads to a better assessment for management to increase the ability to provide customers value. The measure of organizational performance, also do have impact on an organizations reputation.

Milis and Mercken (2003) asserts that all these assessment could only be possible and efficient because of the loads of information provided by ICT, thus the importance of ICT in achieving efficient and effective

organization performance is not be under estimated. Marire, (2021) opines that to perform is to take a complex series of actions that integrate skills and knowledge to produce a valuable result.

Theoretical Framework

This theory was propounded by Hackman and Oldham (1980). The JCM theory explains how and why core job characteristics influence key job outcome, such as job satisfaction and job performance. The model posits that organization can encourage positive employee attitudes and enhance quality of work by enriching a job along five job characteristics. Autonomy is the degree to which the job gives the worker freedom and independence in scheduling work and determining how the work will be carried out, and feedback is the degree to which a worker gets information about the effectiveness of his or her effort, either directly from the work itself or from others (Hackman, and Oldham, 1980). These core job characteristics influence three critical psychological states, namely, experienced meaningfulness of work, experienced responsibility for work outcomes and knowledge of the result that in turn influence effective personal work outcomes. High internal work motivation, high growth job satisfaction, high general job satisfaction, high work effectiveness. Most research suggest that technology influence employee' job characteristics (Morris and Venkatesh, 2010).

Socio-Technical System theory was propounded by Bostrom and Heinen, (2014). The STS Theory explains how ICT implementation in organizations influences employees' job characteristics and job outcomes. STS theory offers a framework to help understand the interdependent between a human and technology factors of modern organizations (Bostrom and Heinen, 2014).

Empirical Review

This section empirically considered and reviewed their works of other authorities related to this work. The empirical review is necessary to find empirical evidence confirming the findings of some authorities and first timers in this area of study. This is organized along the line of the objective of the study which is sub divided into; the effect of ICT on cost reduction; effect of ICT on the improvement of employee skills and finally, effect of ICT on quality of service delivery. The assumption underpinning the adoption of ICT is that an organization as efficient as the people working in them.

Mahmood (2014) examined the Factors Affecting Information Technology Usage in Abuja, Nigeria using a multiple regression approach, found out that lack of necessary infrastructure that will enhance the usage of information technology are not readily available in Nigeria and that the absence of these infrastructures has greatly increased the running cost in many organizations.

In another study by Baya, Billon, and Lopez (2015) on Perceived Performance Effect of ICT on Manufacturing SMEs, using correlation analysis, conducted in Argentina, discovered that ICT is key to growth of SMEs. In a study of manager from Taiwan and Cambodia, Sang (2005) concluded that workforce planning, staffing, compensation and incentives, teamwork, training and employee security had a positive and significant influence on organizational performance. Sanka and Yeong (2007) investigated the Factors Influencing jobs satisfaction of technical personnel using chi-square unveiled that technical personnel needs to be continuously trained to be abreast of new technologies regarding their job. It further emphasized on the need for technical personnel to be versatile.

Methodology

This study used survey research design to generate data from a sample size of 189. From a population of 189 employees of (MTN,102; Airtel, 58; and Glo, 39), but since it is not much the researcher decided to us the entire population as the sample size. This study was carried out in Abakaliki metropolis, Ebonyi State Nigeria. This work made use of both primary and secondary sources of data. The primary source of data collection was mainly through questionnaire. The secondary information was gathered from textbook, internet, journals, and other relevant literatures on the research topic. The hypotheses formulated will be analyzed using Pearson Product Moment Correction Coefficient. In this section of the study, data collected was presented and analyzed to arrive at logical decisions and make conclusions and recommendations. Here tables were used to present,

compute and analyze the data generated. 189 copies of the questionnaire were distributed to staff of (MTN, 102; Airtel. 58 and Glo. 39) and 185 were correctly filled and returned, representing 97.90% of copies distributed.

Sex of Respondent

Table 1.1

Sex	Respondents	Percentage (%)
Male	80	43.24
Female	105	56.76
Total	185	100.00

Source: Field Survey, 2023.

Table 1.1 reveals that 80 respondent representing 43.24% and males, while 105 respondent representing 56.76% were females. Hence there are pre-dominantly more males than females.

Research question one: What are the effects of Information Management (IMT) on cost reduction in telecommunication industry?

Table 2.1: Information Management Technology (IMT) to a reasonable extent reduces incidences of waste and defects.

Options	Frequency	Percentage
Strongly agreed	61	33.0
Agreed	104	56.2
Undecided	12	6.5
Strongly disagreed	-	-
Disagreed	08	4.3
Total	185	100.0

Source: Field Survey, 2023.

As to whether IMT, to a reasonable extent reduces the incidences of waste and defects, Table 2.1 above revealed that 61 respondents, representing 33.0% strongly agree 104 respondents agree; 12 respondents representing 6.5% were undecided while 08 respondents representing 4.3% disagree.

Therefore the researcher concluded that Information and Communication Technology to a reasonable extent reduces incidences of waste and defects.

Table 2.2: The adoption of Information Management Telecommunication (IMT) increases mobility and efficiency

Options	Frequency	Percentage
Strongly agreed	92	49.8
Agreed	89	48.0
Undecided	-	-
Strongly disagreed	-	-
Disagreed	04	2.2
Total	185	100.0

Source: Field Survey 2023.

Based on table 4.2.2, 92 respondents, representing 49.8% strongly agree; 89 respondents representing 48.0% agree while 04 respondents representing 2.2% disagree.

This indicates that the adoption of Information Management Telecommunication. (IMT) increases mobility efficiency.

Research Question two: To what extent does Information Management Telecommunication (IMT) influence the improvement of workers' skills?

Table 2.3: Information Management Telecommunication ((IMT), training programs aids in the acquisition of new and relevant skills which help organizations maintain competitive edge over rivals.

Options	Frequency	Percentage
Strongly agreed	65	35.1
Agreed	85	46.0
Undecided	12	6.5
Strongly disagreed	-	-
Disagreed	23	12.4
Total	185	100.0

Source: Field Survey 2023.

In an attempt to determine the extent to which IMT training program aids in the acquisition of new and relevant skills to help organizations maintain a competitive edge, the respondents were requested to give their view on the option above. Table 4.2.3 revealed 65 respondent representing 35.1% strongly agree; 85 respondents representing 46.0% agree; 12 respondent representing 6.5% were undecided while 23 respondent representing 12.4 % disagreed.

This implies that Information Management Telecommunication training program aids in the acquisition of new and relevant skills to maintain a competitive edge over rivals.

Table 2.4: The adoption of Information Management Telecommunication enhances the core competences of employees in organization

Options	Frequency	Percentage
Strongly agreed	35	18.9
Agreed	110	59.5
Undecided	08	4.3
Strongly disagreed	22	11.9
Disagreed	10	5.4
Total	185	100.0

Source: Field Survey 2023.

Table 1.2.4 reveals that 35 respondents, representing 18.9% strongly agree that the adoption of Information Management Telecommunication enhances the core competences of employees; 110 respondents, represent 59.5% agree; 08 respondents representing 4.3% were undecided; 22 respondents strongly disagree and 10 respondents representing 5.4% disagree.

This implies that the adoption of Information Management Telecommunication enhances the core competences of employees in organizations.

Test of Hypotheses

The researcher tested three hypotheses with the aid of Pearson product moment correlation coefficient. The formula is stated below:

$$r = \frac{n\epsilon xy - \epsilon x \epsilon y}{\sqrt{(n\epsilon x^2 - (\epsilon x)^2)(n\epsilon y^2 - (\epsilon y)^2)}}$$

Where r = correlation coefficient

x = independent variable

y = dependent variable

n = number of observed data

Decision Rule:

Reject Ho: if t- calculated is greater than t- tabulated

Accept Hi: if t- calculated is less than t- tabulated

Formula for t- tabulated and t- calculated are as follows

$$t\text{- tabulated} = (\alpha \div 2) (n - 2) \div 2 \text{ or } \frac{\alpha}{2} (n - 2)$$

$$t\text{- calculated} = \sqrt{(n - 2) \div (2 - r^2)}$$

where α = level of significance = 5% = 0.05

Hypothesis One

Hi: The adoption of IMT has significant effect on cost reduction.

S/N	X	Y	XY	X ²	Y ²
1	120	45	5400	14400	2025
2	113	37	4181	12769	1369
3	98	75	7350	9604	5625
4	130	40	5200	16900	1600
5	123	44	5412	15129	1936
	584	241	27543	68802	12555

$$r = \frac{n\epsilon xy - \epsilon x \epsilon y}{\sqrt{(n\epsilon x^2 - (\epsilon x)^2)(n\epsilon y^2 - (\epsilon y)^2)}}$$

$$= \frac{5(27543) - 584(241)}{\sqrt{5(68802) - (584)^2(5(12555) - (241)^2)}}$$

$$= \frac{137,715 - 140,744}{\sqrt{344010 - 341056}(62775 - 58081)}$$

$$= \frac{-3025}{\sqrt{(2954)(4694)}}$$

$$= \frac{-3025}{\sqrt{13866076}}$$

$$r = \frac{-3025}{3723.72} = -0.81$$

= -0.81 to 2 decimal places

In order to take decision on which hypothesis (Ho or Hi) to select, the t-test will be used.

Therefore;

t- Calculated

$$= r (\sqrt{(n - 2) \div (2 - r^2)})$$

$$= -0.81 (\sqrt{(5 - 2) \div (2 - (-0.81)^2)})$$

$$= -0.81 (\sqrt{3 \div (2 - 0.6561)})$$

$$\begin{aligned}
&= -0.81 (\sqrt{3 \div (2 - 1.3439)}) \\
&= -0.81 (\sqrt{2.2323}) \\
&= -0.81 \times 1.4941 \\
&= -0.21 \text{ to 2 decimal places}
\end{aligned}$$

t- tabulated

$$\begin{aligned}
&= (\alpha \div 2)(n - 2) \\
&= (0.05 \div 2)(5 - 2) \\
&= (0.025 \times 3) \\
&= 0.075
\end{aligned}$$

Decision:

From the analysis above, the correlation (r) is 0.81; t calculated is 1.21 and t - tabulated is 0.075. Since t - calculated is less than t - tabulated, we reject the null hypothesis (Ho) and accept the alternate hypothesis (Hi) which says that the adoption of IMT has significant positive on cost reduction.

Hypothesis Two

Hi: The adoption of ICT has significant positive effect on the improvement of workers skills.

S/N	X	Y	XY	X ²	Y ²
1	114	52	5928	12996	2704
2	109	70	7630	11881	4900
3	90	85	7650	8100	7225
4	99	78	7722	9801	6084
5	137	58	5206	18769	1444
	549	323	34136	61547	22357

$$\begin{aligned}
r &= \frac{n\sum xy - \sum x \sum y}{\sqrt{(n\sum x^2 - (\sum x)^2)(n\sum y^2 - (\sum y)^2)}} \\
&= \frac{5(34136) - 549(323)}{\sqrt{5(61547) - (549)^2(5(22357) - (323)^2)}} \\
&= \frac{170680 - 177327}{\sqrt{(307735 - 301401)(111785 - 104329)}} \\
&= \frac{-6647}{\sqrt{(6334)(7456)}} \\
&= \frac{-6647}{\sqrt{47226304}} \\
r &= \frac{-6647}{6872.14} = -0.967 \\
&= -0.97 \text{ to 2 decimal places}
\end{aligned}$$

In order to take decision on which hypothesis (Ho or Hi) to select, the t-test will be used.

Therefore;

t- Calculated

$$= r (\sqrt{(n - 2) \div (2 - r^2)})$$

$$\begin{aligned}
&= -0.97 \left(\sqrt{(5-2) \div (2 - (-0.97)^2)} \right) \\
&= -0.97 \left(\sqrt{3 \div (2 - 0.9409)} \right) \\
&= -0.97 \left(\sqrt{3 \div 1.0591} \right) \\
&= -0.97 \left(\sqrt{2.8326} \right) \\
&= -0.81 \times 1.6830 \\
&= -1.633 = -1.63 \text{ to 2 decimal places}
\end{aligned}$$

t- Tabulated

$$\begin{aligned}
&= (\alpha \div 2)(n - 2) \\
&= (0.05 \div 2)(5 - 2) \\
&= (0.025 \times 3) \\
&= 0.075
\end{aligned}$$

Decision:

From the analysis above, the correlation (r) is -0.97; t-calculated is -1.63 and t-tabulated is 0.075. Since t-calculated is less than t-tabulated, we reject the null hypothesis (Ho) and accept the alternative hypothesis (Hi) which says that the adoption of IMT has significant positive on the improvement of workers skills.

Discussion of Findings

This discussion is based on the revelations made during the analysis of data gotten from the study. The researcher discussed the finding in line with the hypothesis tested in this study: After the analysis and test of hypothesis one using Pearson Product Moment Correlation coefficient, where t- calculate is (-1.21) and t-tabulated is (0.075). Thus, since t - calculated is less than t - tabulated we reject the null hypothesis (Ho) and accept the alternate hypothesis (Hi) which says that the use of information and communication technology (ICT) has a significant positive effect on cost reduction. There is a growing requirement in recent time for stronger cost control and demand for higher return on business (Milis and Mercken, 2003). The use of information and communication technology (ICT) to gain competitive advantage has become a key strategic issue amongst organization in the fast globalizing environment. ICT reduces organization cost as knowledge is produced, transmitted, accessed and shared at the minimum cost.

Tan (2017) concurred that there is a reduction in the degree of inefficiencies and uncertainty with the use of ICT because it enables organizations to interact more efficiently and this impact positively on cost reduction. Revealed also is that ICT, to a large extent reduce errors, and wastages, and thus reduce cost. Furthermore, ICT reduces organizational cost because it enhance the production process in organizations as monitoring technologies could be used to reduce the number of supervisors required in the process, thus reducing accidents, waste and damaged products.

From the analysis and test of hypothesis two, the t - calculated is (-1.63) and the t -tabulated is (0.075). Since t -calculated is less than t - tabulated we reject the null hypothesis (Ho) and accept the alternate hypothesis (Hi) which says that the adoption of IMT has significant positive effect on the improvement of workers skills. IMT help build competencies.

Conclusion

Based on the revelations made in the course of the study we concluded that information and communication technology is essential for the survival and growth of organizations in today's turbulent and competitive business environment as it aids in cost reduction which translates to competitive advantage. Since the business world is moving at a jet speed, it becomes pertinent to note that information and Communication Technology is of any organization intends to maintain its market share, remains competitive, reduce cost, improve employee skills, sustain customers loyalty, patronage and satisfaction. Therefore, the effective use of ICT in many organizations would assist in creating several opportunities. This implies that there is a need for organization to invest in ICT in order to set themselves apart from their competitors and also have sustainable competitive advantage.

Summary of Findings

From the analysis made the study revealed that; Information and Communication Technology has a significant positive effect on cost reduction in telecommunication industry. Information and Communication Technology has a significant positive effect on the improvement of employee skills in telecommunication industry. Information and Communication Technology has a significant positive effect on the quality of service delivery in telecommunication industry.

Recommendations

The study recommended the following:

That organization should invest adequately in acquiring and utilizing information and communication technology.

That organization should build the human capacity that is versatile and flexible needed to operate and manage the acquired ICT in order to survive and stay abreast of developments in the present competitive global economy.

That organization should also put on place the necessary infrastructure and environment needed for the utilization of the acquired ICT.

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