



Technology and the Performance of Accountants in Tertiary Institutions in Rivers State, Nigeria

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ABSTRACT: *Although extensive work has investigated several ways through which technology can be used to change the way accountants conduct their activities, empirical evidence is lacking on the relationship between technology, work style, performance and collaboration of Nigerian accountants. Accordingly, this study investigated the relationship between technology, work style and collaboration of accountants in Nigerian tertiary institutions in Rivers State, Nigeria. Further, it examined the relationship between technology and the efficiency of accountants in Nigerian tertiary institutions. This study adopted quantitative approach to examine the relationship between these variables and the performance of accountants in Nigeria tertiary institutions in Rivers State. Using regression analysis on the data gathered from 127 accountants in Nigerian tertiary institutions in Rivers State, the result indicate that work style, work collaboration and technology positively influence the performance of accountants in Nigerian tertiary institutions in Rivers State. It is recommended that technology should be adopted by accountants in Nigeria in order to enhance performance and work collaboration. Further, related study should be conducted in other sectors and state, using different methodology, to accommodate the limitation imposed by the scope of the study.*

Keywords: *Technology, Accounting and Accountants.*

I. INTRODUCTION

In the last two decades, there has been increased number of networks and alliances which led to intense competition for Accountants (Chang, Chen, Duh and Li, 2011). The development of network technology led to the development and adoption of electronic data processing (EDP) systems (Norris, Pauli and Bray, 2007, Shark, 2013). The key aspect of EDP includes transaction support system (TSS) which is used to process routine daily business transaction. In this competitive environment, accountants have used advancement in technology to boast productivity and service delivery (Janrin, Birerstaker and Lowe, 2008). Further, Banker, Chang and Kao (2002) asserts that technology enables accountants to automate their routine tasks and improve work collaboration and communication within work group that in turn may strengthen their service delivery. In addition, some accountants are hired to assist integrate firm information system which may have increased in an uncoordinated manner or aid the process of incorporating office automation and automated warehousing. According to Shin (2006), the experience gained with the advancement in technological resources and related services may have rewarded Accountants in terms of productivity.

Bharadway (2000) suggests that some valuable, rare and costly- to- imitate technology resources can be a source of sustainable competition. Xiao, Duh and Chow (2011) asserts that even when technology resources themselves may not be a source of sustained competitive advantage, it can still enhance performance by assisting accountants to realize the potential of other resources that are valuable, rare and costly to imitate. Further, they explain that technology enhance the quality and effectiveness of decision making; it facilitates more rapid identification of problems and opportunities and can provide individual intelligence that is more accurate, comprehensive, timely and available (Molloy and Schwenk, 1995). Specifically, technology use can stimulate the ability of an accountant to (a) store and retrieve large quantity of information more quickly and inexpensively; (b) more rapidly and selectively access information created outside an organization; (c) more readily and accurately configure information through financial analysis; (d) more compactly store and quickly

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use the judgement and decision models developed in the minds of the decision maker, and store as expert systems; and (e) more reliable and inexpensively record and retrieve information about the content and nature of organizational transactions. Straub and Watson (2001) argue that the net-enabled individual can improve business processes while also strengthening integration and synthesis across boundaries.

Although extensive work (Norris, Pauli and Bray 2007., Shank, 2013) has investigated several ways through which technology can be used to change the way we conduct our lives, Jaspersen, Carter and Zmud (2005) argue that technology is underutilized. Further, Coxhead, Rola and Kim (2001), Deininger (2003) and Mog (2004) argue that such intervention for sustainable development must embrace broader context in which such operates and should be integrated with markets, policies and other external influencers such as economic, political, cultural and demographic variables. In view of the extant support for technology's performance benefits, it is necessary to investigate the relationship between technology and accountants performance in Nigeria.

1.1 Statement Of The Problem

As technology advanced, so did the speed and proficiency of the accountant's job. Towards the end of the twentieth century the accounting profession began to take on a new look. Computers and accounting software have changed the industry completely. Accountants that have not adapted to the faster pace of increasing complexity of the business environment will be irrelevant and consequently lose out to the increasing competition brought about by globalization. Accountants are expected to express opinion on the financial statements as presented by management among other functions. The relevance of financial statement depends on the quality of financial information. The cadbury saga and other bank failures in Nigeria have put to question the reliability of financial statement and accountability expected from financial information processes. To support accountability, information must be sufficient, accurate, timely, and available to accountants to meet its responsibilities. To help ensure reliability of information, the auditor evaluates control over unacceptable processing and reporting. The United States congress passed the Sarbanes Oxley Act 2002, in an effort to stop corporate accounting fraud and consider the shareholders best interest first . An importance was placed on audits of financial controls, therefore, auditors are now expected to design internal controls and evaluate the effectiveness and efficiency of the company's computer systems. By documenting and testing internal controls on real time data they could ensure the company's reliability of financial reporting. In most corporate collapse and accounting scandals globally, accountants are to blame. Thus, the application of e-business, internet, intranet, extra-net, software, cloud computing, electronic systems assurance and control (eSAC) are designed to enhance the performance of accountants in tertiary institutions in Rivers State, Nigeria. But Nigeria's economy at present is declining resulting in high cost of living. The cost of ICT is expensive, sophisticated and takes more time to implement. This has also affected training and retraining of accountants in Nigeria. This study, therefore, seeks to find out the extent to which ICT has affected the performance of accountants in Nigeria

The remaining part of this work is organized as follows: section 2 describes the relationship between technology and the performance of accountants, section 3 describes the methodology, section 4 discusses the findings and section 5 describes the conclusion drawn and recommendations.

II. EMPIRICAL REVIEW

2.1 Technology And Modern Accounting

The roles of technology in accounting and control process start from efficiency enhancement (Taipaaleeromaki and Ikaheimo, 2013) to a more abstract mediating role (Granlund, 2011). Similarly, Arnold, Benford, Canada and Sutton (2011) assert that technology facilitates integrated and flexible operations and has become an important part of Accounting Information System (AIS) (Granlund and Mouritsen, 2003). This has enhanced and facilitated the materialization of the purpose of accounting through the use of technologies such as the internet and digital communication software and database solutions (Dechow, Granlund and Mouritsen, 2007).

According to Gasemi, Shafeiepour, Aslani and Bavayeh (2011), technology is used to share knowledge bases across different parts of organizations that enable professionals to track and record financial transactions. With technology, accountants are able to translate paper ledgers, manual spreadsheets and hand-written statements of financial into computer systems that is faster in generating reports. Technology is associated with improved and increase timeliness of accounting information. Thus, with technology, accountants can prepare reports and operation analyses that enable the management to provide a true state of affairs for an organization. In addition to the reduction in the lead time to present financial information, technology also has been assumed to positively influence the efficiency and accuracy of accounting information. Bresnahan, Brynjolfsson and Hitt (2002) found a positive relationship between aggregate measures of technology and organizational performance. Similarly, Hitt, Wu and Zhou (2002) reported a significant positive association between enterprise resources planning (ERP) adoption and sales, returns on investment, inventory turnover, profit margin and financial

market valuations. Nevertheless, empirical evidence is lacking on the relationship between technology and the performance of accountants in Nigeria.

To Investigate The Relationship, We Hypothise As Follows:

H01- There is no positive relationship between technology, work style and collaboration of Nigerian accountants.

H02- There is no positive relationship between technology and the efficiency of Nigerian accountants.

III. METHOD

An exploratory design was adopted for this study. Using a convenience sample, 127 Accountants were randomly selected. The criteria for the selection of the participants are:1) Accountants that are working in Tertiary institution, and 2) ability to use information technology

The questionnaire consist of five parts:1) demographic, 2) Technology used, 3) area of application of technology, 4) work style and collaboration and 5) Job performance. To measure the level of ethical sensitivity, the questionnaire is used with 5 –points, agreed-disagreed Likert-Scale questions. Technology is measured by the use of telephone, internet, software/packages and data solution. Similarly, technology is assumed to be used for store and retrieval of information, financial analysis, reporting, preparation of ledger accounts and preparation of cashflows and was measured in terms of their strength. Further, work style and collaboration was defined by consequences of actions, flexibility of working pattern and the sharing of information. Lastly, performance is measured in terms of speed and accuracy of reports as well as the opportunities associated with technological skills.

IV. RESULTS

Table 1: Demographic Data of the Respondents

Demographic variables	No. of Respondents	Percentage (%)
Gender		
Male	87	68.5
Female	40	31.5
Total	127	100
Professional qualification		
ACCA	10	7.9
CITN	8	6.3
ICAN	31	24.4
ICPAN	11	8.7
OTHERS	67	52.8
Total	127	100
Academic qualification		
B.Sc/HND	78	61.4
Master	46	36.2
Ph.D	3	2.4
Total	127	100
Age (years)		
Under 25 years	4	3.1
25-40 years	58	45.7
41-50 years	49	38.6
Above 50 years	16	12.6
Total	127	100
Working experience		
Less than 5 years	21	16.5
5-10 years	50	39.4
11-20 years	32	25.2
Above 20 years	24	18.9
Total	127	100

Result on Table 1 shows that there are a total of 127 respondents (100%). Thirty-one respondents (24.4%) were ICAN members, 10 respondents (7.9%) were members of ACCA, 8 representing 6.3% were members of CITN, 11 of the respondents (8.7%) belong to ICPAN professional body while 67 of the respondents (52.8%) had other or no professional qualifications. The distribution of academic qualification shows that 78 respondents (61.4%) were B.Sc/HND holders, 46 respondents (36.2%) were holders of Masters and the remaining 3 respondents (2.4%) had PhD degree. Result also reveals that 4 respondents (3.1%) were under 25 years, 58 respondents (45.7%) were between 25-40 years, 49 respondents representing 38.6 percent of the respondents was between 41-50 years while 16 of the respondents (12.6%) were above 50 years of age. Twenty-one respondents corresponding to 16.5% of the respondents had less than 5 years working experience, 50 respondents (39.4%) had between 5 to 10 years working experience while 32 (25.2%) and 24 (18.9%)

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respondents had 11-20 years and above 20 years working experiences respectively. Below is the tabular presentation of the respondents' age – work experience distribution which shows a further insight into the respondents' demographic properties:

Table 2: Respondents' Age bracket distribution over their Work Experience

Age Brackets	< 5	5 – 10	11 - 20	> 20	Total
< 25	4	0	0	0	4
26 – 40	16	28	13	1	58
41 – 50	1	22	17	9	49
> 50	0	0	2	14	16
	21	50	32	24	127

Source: Field Survey

Measurement of Variables

In accordance with the 5-point Likert scale employed in the current study, 1 – 2 represents graduated degree of negative opinion while 4 – 5 represents graduated degree of affirmative opinion relative to the construct presented in the questionnaire. Therefore, an average score below 3 would suggest a negative collective response to a particular variable of interest while score above 3 suggest that collective response to the variable of interest is in the affirmative. On the basis of the foregoing premises, the following table presents the result of variable measurement:

Table 3: Respondents on Factors that measures the underlying variables

Latent Variable	Overall Score	Verdict
Degree of utility derivable in technology	4.1	Agree
Extent of relevance of IT to Accounting Functions	3.6	Agree
Work style and Technological collaboration	4.5	Agree
Job Performance	3.8	Agree

Result on Table 3 shows the consensus verdict by respondents based on a five-point Likert scale, the degree of utility derivable in technology relative to job performance, extent of relevance of Information Technology to Accounting Functions in relation to job performance, extent to which work-style and technology collaboration engenders job performance and job performance measurement. Each of the research variables were further examined across some relevant demographics and the results were each represented on a table to give an impression of respondents' average opinion.

Table 4 (A): Distribution of Opinion over Respondents' age brackets

	Tech Utility	IT Relevance	Workstyle	Performance
< 25	4.4	3.4	4.8	4.1
26 – 40	4.1	3.6	4.4	3.8
41 – 50	4.1	3.5	4.5	3.7
> 50	4.2	3.4	4.4	3.6
Overall	4.1	3.6	4.5	3.8

Source: Field Survey

Table 4 (B): Distribution of Opinion over Respondents' Working Experience

	Tech Utility	IT Relevance	Workstyle	Performance
< 5	3.8	3.4	4.2	3.4
5 – 10	4.2	3.6	4.5	3.9
11 – 20	4.2	3.6	4.5	3.9
> 20	4.2	3.5	4.4	3.7
Overall	4.1	3.6	4.5	3.8

Source: Field Survey

Since each of the variables is measured with a collection of supposedly related constructs, there is need to test the unidimensionality (i.e., the extent or proportion of the underlying variable explained by the constructs) of the constructs, for each of the variables. In this regard, factor analysis is employed with the intention to measure the extent to which the constructs collectively measure the intended variable (also known as the latent variable) which is not so obvious to be observed pragmatically. This is exactly what the Eigen-

value seeks to measure. As a rule of thumb, any Eigen-value which is greater than one, or which accounts for greater than 33%, is acceptable for inclusion in the analysis.

Factor Analysis involves three techniques. Of the three frequently used techniques of factor analyses, the researcher opted to use the centroid technique because it is easier to use and simpler to understand. The objective of using factor analysis is to collapse the several constructs for each of the variables into one principal variable so that the variable so obtained can be subjected to further analysis, such as linear regression. Results from Factor Analysis are presented in table 5 below:

Variables	Internal Consistency (Cronbach Alpha)	Eigen-Values	Proportion Explained
1. Degree of utility derivable from technology	0.8626	2.898	72.4%
2. Extent of relevance of IT to Accounting Functions	0.9875	3.643	45.5%
3. Work style and Technological collaboration	0.7333	2.237	55.9%
4. Job Performance	0.8644	2.894	72.3%

Table 6 below, discloses the direction and magnitude of relation among the research variables. Table 6 is important because it is meant to give indication of multi-collinearity related problems which can possibly arise from the relationship amongst the variables. A cursory glance at the correlation matrix shows that there are indications of significant relationship among some of the variables. *Tech Utility* tends to be very strongly related (92.8%) with *Performance*. Similarly, *Work style* is observed to be significantly correlated with *Performance* (41.8%) and *Tech Utility* (38.7%). *IT Relevance* however is observed to have very weak correlation with any of the other variables. In overall, the correlation matrix does not give significant indication of multi-collinearity threats.

	Tech Utility	IT Relevance	Workstyle	Performance
Tech Utility	1			
IT Relevance	0.0969	1		
Workstyle	0.3869	-0.0174	1	
Performance	0.9279	0.1605	0.4178	1

Test of Hypotheses

Multiple regression was used to examine the impact of the three predictor variables (degree of utility derivable from technology, Extent of Relevance of IT to Accounting Functions and Workstyle Collaboration with Technology) on Job Performance. The adjusted coefficient of determination of 0.868 was obtained, which means that the four predictor variables accounted for 86.8 percent of the variation in Job Performance of accountants. In terms of model adequacy, the F-value of 276.11 with p-value of 0.000 ($p < 0.05$) were obtained which indicates that Degree of Utility derivable from technology, Extent of Relevance of IT to Accounting Functions and Workstyle Collaboration with Technology, significantly exert joint influence on Job Performance of accountants in Rivers State.

Table 7: Multiple Regression Result Summary of the Impact of Technology Utility, IT-Relevance and Work-Style Collaboration on Job Performance.

SUMMARY OUTPUT					
<i>Regression Statistics</i>					
Multiple R					0.93312
R Square					0.87071
Adjusted R Square					0.86755
Standard Error					1.05731
Observations					127

ANOVA	df	SS	MS	F	Significance F
Regression	3	925.991	308.664	276.109	0.000
Residual	123	137.502	1.118		
Total	126	1063.493			

	<i>Coefficients</i>	<i>SE</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper</i>
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						95%
Intercept (β_0)	0.0000	0.0938	0.0000	1.0000	-0.1857	0.1857
Tech Utility (TU)	0.8907	0.0353	25.2079	0.0000	0.8208	0.9607
IT Relevance (IR)	0.0591	0.0256	2.3086	0.0226	0.0084	0.1097
Workstyle (WC)	0.0957	0.0455	2.1017	0.0376	0.0056	0.1859

$$Performance = \beta_0 + \beta_1 TU + \beta_2 IR + \beta_3 WC + \varepsilon$$

$$Performance = 0.000 + 0.891TU + 0.059IR + 0.096WC + \varepsilon$$

The standardized beta coefficient showed that Tech Utility ($B_1 = 0.891$, t calc. = 25.208, $p = 0.000$, $p > 0.05$) has positive and significant impact on Job Performance of accountants in Rivers State. This means that the null hypothesis which states that degree of utility derivable from technology does not positively impact on Job Performance of accountant in Rivers State is rejected.

For the second hypothesis, the standardize beta of 0.059 ($B_2 = 0.059$, t calc. 2.309, $p = 0.026$, $p < 0.05$) were obtained. This also indicates that Extent of Relevance of IT to Accounting Functions has positive impact on Job Performance of accountants in Rivers State. The p -value is less than 0.05 ($0.026 < 0.05$) which means that the second hypothesis is rejected. Therefore, Extent of Relevance of IT to Accounting Functions has significant positive influence on Job Performance of accountants in Rivers State.

Moreover, result obtained from the regression analysis further revealed significant positive impact of Workstyle Collaboration with Technology on Job Performance ($B_3 = 0.096$, t calc. = 2.102, $p = 0.038$, $p < 0.05$) meaning that null hypothesis three is similarly rejected. Therefore, Workstyle Collaboration with Technology has significant positive influence on Job Performance of accountants in River State. In summary, all null hypotheses were rejected at 0.05 level of significance.

V. CONCLUSION

Since last two decades, a new wave of networks and alliances has led to increased competition for accountants, which is assumed to affect the education sector. Education sector has long been considered as been central to achieving economic growth and sustainable development. This wave is linked to productivity and service delivery. Because accountants adoption and implementation of technological resources was expected to manifest itself differently by sector for sustainable competition, the authors applied technology on accounting functions, work style, job performance and work collaboration. From the findings, the multiple regression indicates that technology positively influence accounting functions, work collaboration and job performance of accountants in the public sector, particularly in tertiary institutions in Rivers State. This collaborate the findings of Straub and Watson (2001). Arguably, the technological edge tends to strengthen the possibilities for bringing into question the ways of enhancing performance of accountants.

VI. RECOMMENDATION

It is recommendation that accountants should be apply technology in accounting functions, work collaboration and as a work pattern in order to stimulate job performance. Further, similar study should be conducted in other sectors and states, using different approach, to take advantage of the limitation imposed by the study.

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