



ICT PROFICIENCY AND THE ACCOUNTING PROFESSION IN NIGERIA

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ABSTRACT: *The study was carried out to assess ICT proficiency of accounting practitioners as one of the contemporary challenges facing the accounting profession and education in Nigeria. The study was anchored on the Technology Acceptance Model (TAM) and adopted the survey research design. The population of the study consists of accounting practitioners in Delta State. Data were collected through questionnaires. Using a purposive sampling method, 80 accounting practitioners made up lecturers and chartered accountants (in practice) were selected for the study. Descriptive statistics was used to assess the level of proficiency while an independent sample t-test was used to examine the difference in level of proficiency. The study found proficiency in usage of software packages to include Microsoft Word - 100%; Excel spreadsheet - 76%; PowerPoint presentation - 78%; QuickBooks - 38%; Sage (any version) - 42% and XBRL - 8%. The study also found a significant difference in level of proficiency (usage) between accounting lecturers and practicing chartered accountants. The study revealed that practicing chartered accountants are more ICT savvy than accounting lecturers. The policy implication is that lecturers who are supposed to bequeath ICT competencies on future accountants are deficient hence accounting graduates will face challenges bracing up to the technological advancements of the 21st century. The study recommends amongst others that regulatory authorities such as the National Universities Commission (NUC) and the National Board for Technical Education (NBTE) should make having an accounting laboratory and ICT compliant lecturers a precondition for accreditation.*

KEYWORDS: Information Communication Technology, Accounting Information System, Accounting Profession, Technology Acceptance, Accounting Software.

INTRODUCTION

The emergence of new innovations and technological advancement has fundamentally affected business models. Artificial intelligence (AI), dolls and robots are now being used to replace manpower in a broad cross-section of industries from healthcare, banking, marketing to engineering and military. The accounting and finance disciplines have also been affected



by computerization. In the banking sector, for instance, Automated Teller Machines, bot-technologies, online banking applications and Point of Sale (POS) devices are having a profound impact on banking processes. The accounting profession is not left behind as there are software applications for large data mining, reporting, auditing, fraud protection, cloud computing and asset management (ACCA, 2020; Doraisamy & Stalley, 2016; Yoon, 2020).

Software packages are offering many opportunities that simplify tasks and enhance productivity. There have been many applications developed specifically for accounting use e.g. QuickBooks, NetSuite, Sage 50, Audit Commander, XBRL. According to Pan and Seow (2016), the ICT applications enhance data processes such as extracting the data, categorising and analysing to uncover hidden patterns, unknown correlations, market trends, customer preferences and other useful information for businesses. ICT proficiency creates vast opportunities for the accounting profession; including versatility in operations, data management, large data mining, financial reporting, share price forecasting, portfolio management, investment analysis, responding to fraud risks, increasing audit efficiency and effectiveness, and adding value to clients' business processes (Ellwel, 2020; Savilla, 2017; Cieslak, Mason & Vetter, 2019; Coley, 2019; Fernandez & Aman, 2018).

It is in response to emerging trends in the accounting profession that the International Accounting Education Standard Board's (IAESB) in 2017 set up Strategy 2017-2021 and Work Plan 2017-2018 to examine mega trends to help inform the direction of accounting education in the digital era. The Strategy and Work Plan focus on ICT skills development for professional accountants (Ovaska-Few, 2017). The 21st century is sometimes referred to as being the "Digital Age"; hence, to remain relevant in today's world of e-banking, e-commerce, e-government, etc., a digital strategy in accounting is especially important. The accounting profession has been characterized by adoption of modern technology and innovation that present-day and future accountants need to get acquainted with in order to compete favourably in the marketplace. The traditional method of biro and ruler to draw up ledger accounts in the office is gradually giving way. In most job interviews, questions about preparing a trial balance, reconciling bank transactions and presenting financial statements are becoming obsolete. Business executives are becoming more interested in ICT proficiency of applicants in handling accounting and statistical packages for optimum and efficient delivery. Due to increasing technological advancement among accounting functions, it is therefore not difficult to understand why there is growing demand for advanced ICT knowledge and skills in accounting professionals. But how are accounting practitioners in the developing countries bracing up to this challenge. This is what this study seeks to examine.

Statement of Problem

The growing need for ICT proficiency in accounting professionals has been recently acknowledged by diverse accountancy bodies. American Accounting Association (AAA) (2019) states that in today's digital world, academic accounting programmes need to swiftly develop incentives, partnerships, and processes that identify and integrate current and emerging accounting software throughout their academic curricula. Association of Chartered Certified Accountants (ACCA) (2016) notes that there is a significant gap between academic instruction and what obtains in the work environment. ACCA contends that the situation places the profession at great risk of not being able to fulfill its value proposition. PricewaterhouseCoopers (PwC), one of the big four audit firms, in a recent report on ICT workforce trends, states that there is a chronic shortage of job candidates with ICT and



analytics skills. In their survey, 59 percent of employers stated that ICT proficiency and analytics skills will be required by all managers in 2020. A worrisome part of the PwC report is that only 23 percent of university teachers report that their graduates will have these skills (PricewaterhouseCoopers, 2017).

In view of these, it is believed that the dynamic nature of technological advancement and ICT development is critical if today's accountant is to remain relevant. This paper therefore is in response to the growing global awareness about the benefits of professional accountants being ICT compliant and the fact that educational institutions and accountancy bodies need to invest in ICT in order to keep pace with the dynamics of the 21st century digital world.

Objectives of the Study

The broad objective of the study is to assess the level of ICT proficiency of accounting practitioners in Delta State, Nigeria. The specific objects are to:

- (i) examine the proficiency of accounting practitioners in ICT software applications in Delta State, Nigeria; and
- (ii) determine if there is any significant difference in level of ICT proficiency between accounting lecturers and practicing chartered accountants in Delta State, Nigeria.

The above objectives formed the rationale for the research questions this study addressed as well as guided the hypotheses tested.

LITERATURE REVIEW

ICT Skills Development in the Tertiary Education Curriculum

A number of accounting functions are now being facilitated with the aid of the computer. This in turn has brought about an increase in quest for advanced IT knowledge and skills for accounting professionals. In acknowledgement of this trend, the academia and professional accountancy bodies have been adjusting accounting curriculum and syllabus to reflect this development. In terms of the current situation in Nigerian universities, the Nigeria Universities Commission (NUC)'s Benchmark and Minimum Academic Standards (BMAS) stipulate that ICT skills be taken as a General Study (GST) at the first year by accounting students. However, some universities rely on the Computer Science department to handle this course hence the course may not be delivered in the accounting context. The NUC BMAS (2016) also introduced the Application of Accounting Software in the second year as a core course to be taken by all accounting students. The course is designed to be more practical in the accounting laboratory. The course is meant to help students apply ICT knowledge to organize, analyze and report data using MS Excel, MS Access, MS Word and PowerPoint, QuickBooks, Sage, Audit Commander, Interactive Data Extraction and Analysis (IDEA) etc.

At the professional level, the Institute of Chartered Accountants of Nigeria (ICAN) makes it mandatory for professional students to take Information Technology in Professional Examination One (PE1). However, when the ICAN syllabus was reviewed in 2014, the subject was dropped. At the completion of professional examinations of ICAN, students are



expected to undergo Technology Competence Initiative training before being inducted as chartered accountants (ICAN, 2015). The Institute also organizes mandatory continuing professional education for members so as to keep up to date with changes in the business environment. The MPCEs have sessions on emerging technologies, advanced tax analytics, cyber security, information risks and cognitive technologies as is related to auditing and accounting profession.

Information and Communication Technology

Information Communication Technology (ICT), which is regularly, used as another extended word for IT is a term that stresses the role of unified communications and the integration of telecommunications, computers, as well as necessary enterprise software, middleware, storage, and audio-visual systems, which assist users to access, store, transmit and manipulate information (Choo & Shahryar, 2013). It is the application of computers and communication technology in the task of information handling, information and information flow from the generation to the utilization levels. ICT consists of hardware and software products, information system operations and management processes. It involves controlling frameworks, and the human resources and skills required to develop, use and control these products and processes to generate the required information (Greenstein-Prosch, McKee & Quick, 2008). In this study, we define ICT as the use of software and hardware solutions, electronic devices and technology to manipulate data for the purpose of providing support for accounting information systems, operations and strategy in organisations.

Accounting Software

Accounting Software is a class of database-oriented computer programs that perform accounting operations. An accounting software application enables users to operate on databases using the requisite interface and also takes the required reports by suitable transformations of stored data into information (Thottoli, 2020; Taiwo & Agu, 2016). Innovations in information technology have led to the introduction of different accounting software suitable for diverse areas in accounting and auditing. Accounting Information System (AIS) in modern organisations tends to involve dedicated accounting software and digital spreadsheets to keep track of business financial transactions. Adoption of ICT in the accounting information system has revolutionized the traditional paper methods of accounting. Through the use of technology, corporate organisations now create entire accounting information system that integrate all business operations, inventories, receivables, payables, payroll systems and working capital management. With computerized accounting system, accountants, auditors and finance managers have access to vital accounting information at the touch of a button (Tunde, 2020; Ellwel, 2020).

There have been many software applications developed specifically for accounting use. Some of the commonly used software include QuickBooks, NetSuite, Wave, Peachtree now (Sage 50, Evolution, Pro) etc. The Audit Commander and IDEA are some software applications used in auditing. The extensible business reporting language (XBRL) is also one of the recently developed advanced accounting technologies that facilitate continual and instantaneous reporting. Though still gaining momentum in Nigeria's banking sector, the software increases the accuracy, efficiency, and transparency in financial reporting via the web (Ogundeji, Oluwakayode & Tijani, 2014; Thottoli, 2020).



Underpinning Theory: Technology Acceptance Model

The Technology Acceptance Model (TAM) was propounded by Ajzen and Fishbein (1980) and further developed by Davis (1989). The theory centres on beliefs and attitudes of users towards acceptance and rejection of technology. Ajzen and Fishbein (1980) hypothesized perceived usefulness and ease of use as fundamental determinants of user technology acceptance. Their theory posits that user's behavioural intentions to a large extent determine actual technology acceptance. With the ever-dynamic growth and introduction of new technologies, the TAM theory becomes important. This is because adapting to changing technologies depends on factors such as accessibility, ease of use, need for the devices, cyber security threat and cost of acquiring knowledge to use the applications. The TAM theory is adopted for this study as it captures the attention of the ICT systems community. Thus, it is essential for a study on technology awareness or proficiency to have an understanding of how receptive the users are towards such technology.

ICT and the Accounting Profession

The advent of technology creates exciting opportunities as well as a threat for the accounting profession. According to PricewaterhouseCoopers (2015), accounting has topped the list for the professions most at risk from technological advancements. The survey rates the risk of accounting being completely computerized in the next 20 years at 97.5 percent probability. This means that most of the routine accounting work will be carried out by automated machines. The implication is that there will be significant job losses. On the other hand, auditors' roles in the digital age will also change radically as they will need to combine ICT proficiency with behavioral skills to exercise professional judgment. The services that accountants and auditors provide will broaden to include big data analysis, assisting clients to move into cloud computing and business modeling. In this regard, accountants who are ICT compliant rather than becoming expendable, will be even more valuable to their clients in this time of rapid technology change (Drew, 2019; O'Neill, 2020; Riddell, 2015).

However, many accountants still adopt outdated systems that were developed centuries ago. Such accountants that are not embracing the technological innovations are at risk of losing out to competitors that are using systems underpinned in more recent technological developments (Braine, 2016). Embracing technological developments is crucial to a survival of present and future accountants. Malkovic (2015) suggests that employers of today's accounting graduates are seeking candidates who exhibit a blend of technical ('hard skills'), digital technology skills and behavioral skills. Stakeholders in the profession including industry practitioners, professional chartered accountants (auditors) and academics have reported on the importance of the development of these types of skills required and how best these skills can be inculcated in the accounting classroom (Malkovic, 2015).

METHODOLOGY

This study adopted a survey research design. The population of the study consists of all accounting practitioners in Delta State. There are 19 tertiary educational institutions in Delta State – University - 8, Polytechnic/Mono-technic – 6 and College of Education – 5. Using a purposive sampling technique, ten institutions offering accounting courses were selected. Four lecturers were further selected from each of the ten institutions making a total of 40



lecturers. In addition, using the register of members of the three district societies of ICAN in Delta State – Asaba – 130, Warri – 65, Abraka – 38, there are about 233 chartered accountants in Delta State. However, the study is interested in active members in private practice; hence, adopting a censoring technique, 40 active members in private practice were selected for the study. A stratified sampling method was further adopted so as to give a proper representation to each district society using proportionality formula. Thus: $S = A/N(n)$ – where s – final sample size; A – population of each district society; N – total population of members and n – estimated sample size used in the study. In this regard, Asaba District Society – 22, Warri District Society – 11 and Abraka District Society – 7. The final sample size for the study is 80 comprising 40 lecturers and 40 practicing-chartered accountants.

The study made use of primary data. To achieve this, a self-developed questionnaire was designed. The questionnaire is divided into two sections. Section A seeks to obtain information on respondents while Section B consists of items checklist measuring ICT proficiency of the sampled accounting practitioners. The questionnaire was pilot tested for validity. The reliability of the questionnaire was calculated as 0.73 using Cronbach's Alpha coefficient. Descriptive statistics was used to assess the level of proficiency while an independent sample t-test was used to examine the difference in level of proficiency.

DATA ANALYSIS AND RESULTS

The sections that follow provide the findings of statistical analyses for answering the two research questions. Prior to this, the demographic statistics for the survey results are presented thus:

Table 1: Demographic Characteristics of Respondents

| VARIABLE | Type | Lecturers | Accountants | Mixed |
|-----------------------------|-------------------|-----------|-------------|---------|
| Gender | Male | 28(70%) | 34(85%) | 62(77%) |
| | Female | 12(30%) | 6(15%) | 18(23%) |
| Age | Less than 30 | 7(25%) | 11(27%) | 18(22%) |
| | 31 – 44 | 16(40%) | 21(53%) | 37(46%) |
| | 45 and Above | 17(43%) | 8(20%) | 25(32%) |
| Highest Acad. Qualification | BSc/HND | 0(0%) | 11(27%) | 11(13%) |
| | Masters | 18(45%) | 23(57%) | 41(51%) |
| | Doctorate | 22(55%) | 6(14%) | 28(36%) |
| Professional Qualification | ICAN | 21(52%) | 33(83%) | 54(67%) |
| | ANAN | 8(20%) | 2(5%) | 10(12%) |
| | ACCA | 1(2.5%) | 5(12%) | 6(7.5%) |
| | Others | 4(10%) | 0(0%) | 4(10%) |
| | None | 6(15%) | 0(0%) | 6(7.5%) |
| Work Experience | Less than 5 years | 12(30%) | 6(15%) | 18(22%) |
| | 5 – 10 | 8(20%) | 13(33%) | 21(26%) |
| | 11 – 20 | 16(40) | 11(27%) | 27(33%) |
| | 21 and Above | 4(10) | 10(25%) | 14(19%) |

Source: Field Work, 2020



Table 1 shows the demographic characteristics of the study sample. Out of the 80 respondents, 77 percent are male while 23 percent are female. The statistics for gender also shows that 85 percent of lecturers sampled are male as against 15 percent female. 46 percent of all the respondents are between the age 31 – 44 with 43 percent of lecturers in the age bracket of 45 and above. Practicing accountant recorded the lowest age bracket with 20 percent between 45 and above.

Further, 51 percent of the respondents have a Master's degree as the highest academic qualification. However, 55 percent of lecturers have a Doctorate. All lecturers sampled have at least a Master's degree. 54 percent of all the respondents have ICAN professional qualification with 83 percent of the forty sampled practicing accountant ICAN certified. 2.5 percent of the sampled lecturers have an ACCA certificate. The statistics also shows that a practicing-chartered accountant in the survey has at least one professional certification in accounting.

Finally, the demographic characteristics show that 33 percent of all respondents have been in either academia or accountancy practice for between eleven to twenty years with 10 percent of lecturers having been in a lecturing job for over 21 years.

Research Findings

Research Question One: What is the level of ICT Proficiency of Accounting Practitioners?

In order to provide answer to this research question, the survey responses were analyzed as presented in table 2 thus:

Table 2: Proficiency in Usage of Software Applications

| ICT Proficiency | Lecturers | | Accountants | | Mixed | |
|------------------------------|-----------|---------|-------------|---------|----------|---------|
| | YES | NO | YES | NO | YES | NO |
| MS Word | 40(100%) | 0(0%) | 40(100%) | 0(0%) | 80(100%) | 0(0%) |
| MS Excel | 27(68%) | 13(32%) | 34(85%) | 6(15%) | 61(76%) | 19(24%) |
| MS PowerPoint | 38(95%) | 2(5%) | 36(90%) | 4(10%) | 62(78%) | 18(22%) |
| QuickBooks | 11(28%) | 29(72%) | 19(47%) | 21(53%) | 30(38%) | 50(62%) |
| Sage Accounting -Any Version | 9(23%) | 31(77%) | 25(63%) | 15(37%) | 34(42%) | 46(58%) |
| XBRL | 2(5%) | 38(95%) | 6(15%) | 34(85%) | 8(10%) | 72(90%) |

Source: Field Work, 2020

The table shows that the top most software used by practicing professional accountants and lecturers is the MS Word with 100 percent in proficiency of usage. The statistics also shows that 61 percent of the total respondents adopt the use of MS Excel. However, 90 percent of practicing chartered accountants have proficiency in the use of MS Excel software as compared to 68 percent of lecturers sampled. The use of MS PowerPoint by all respondents shows 78 percent with 95 percent of lecturers using the software proficiently while practicing accountants recorded 90 percent in proficiency of usage.



The statistics also show that non proficiency in usage of XBRL, Sage and QuickBooks in that order. 90 percent of respondents have not used XBRL software before. The level of usage of Sage and QuickBooks is also low based on responses of 58 percent and 62 percent respectively not being used to the software. Breaking down the statistics into the groups, it is observed that only 5 percent of lecturers are able to use XBRL software with 15 percent practicing accountants. Further, 77 percent of lecturers have not used the Sage Accounting software while 63 percent of practicing accountants surveyed are proficient in use of Sage Accounting. The survey result also shows that 72 percent of accounting lecturers are not proficient in use of QuickBooks accounting software as against 53 percent of practicing accountants.

Research Question Two: what is the difference in ICT Proficiency between accounting lecturers and practicing chartered accountants?

An independent-samples t-test was conducted to compare the level of ICT proficiency (usage) between accounting lecturers and practicing chartered accountants. There was a significant difference in the scores for accountants ($M = 33.4$, $Std = 0.52$) and lecturers ($M = 21.8$, $Std = 0.84$) conditions; $t(40) = 3.42$, $p = 0.018$. These results suggest that there is a significant difference in the level of ICT proficiency between practicing-chartered accountants and lecturers. Mean usage of ICT/software by practicing chartered accountants recorded 33.4 indicating that practicing accountants are more ICT savvy than their lecturer counterpart.

CONCLUSION AND RECOMMENDATIONS

The study was carried out to assess the level of ICT proficiency of accounting practitioners in Delta State, Nigeria. Descriptive statistics was used to assess the level of proficiency while an independent sample t-test was used to examine the difference in level of proficiency. The study finds that accounting practitioners are proficient in usage of Microsoft Office packages such as MS Word, Excel and PowerPoint. The study also finds least usage (proficiency) in modern accounting and reporting software XRBL. Findings of the study also indicate a significant difference in level of proficiency (usage) between accounting lecturers and practicing chartered accountants. The study revealed that practicing chartered accountants are more ICT savvy than accounting lecturers. The policy implication is that lecturers who are supposed to bequeath ICT competencies on future accountants are deficient hence potential accounting graduates will face challenges bracing up to the technological advancements of the 21st century.

Following from the findings of the study, it is recommended that educational institutions should reemphasize the need for establishing ICT/Accounting laboratories to bequeath the relevant ICT skills in lecturers.



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