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Assessment of Awareness of Business Education Students in Automated Accounting for Future Functionality on Graduation

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Abstract

This research assessed the awareness of Business Education Students in Automated Accounting for Future Functionality on Graduation. Business education students need to be fully aware of accounting automaton so as to be prepared for it. Descriptive survey design was used to obtain the opinions of the respondents on their awareness of accounting automaton. Population of the study was 164 final year (2018/2019) students of business education drawn from public universities in South-East, Nigeria. There was no sampling. Questionnaire was used to collect data from respondents. Responses were obtained based on a four-point likert scale of highly-aware, moderately-aware, slightly-aware and unaware and analysed using statistical package for social sciences (SPSS) version 22 and categorised using real limits of numbers. Most of the respondents showed slightly aware in tax accounting automation and cost accounting automation. The hypothesis was tested on a 0.05 level of significance using a Chi-Square test which revealed that there is a significant difference between the responses based on locations, and that there is no significant difference in the responses based on Gender. The major finding of the study was that Business Education Students are slightly aware of automation in accounting. This is due to lack of personal efforts to be updated with technological trends in Business Education and the Business Education curriculum content does not provide learning experiences for automation in accounting. Based on the findings, the researchers concluded that lack of awareness of business education students in automated accounting may lead to the replacement of business education students with an information technology (IT) skilled counterpart or personnel by most firms.

Keywords: Accounting automation, cost accounting, tax accounting, accounting automation awareness, business education students

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1. Introduction

In the manufacturing sector today, human capital is still essential for most factories to carry out a variety of manual operations, in spite of the rapid advancement of automation technology and robotics. Futuristic vision of “unmanned manufacturing” (Deen 1993) is forbiddingly expensive, because all its hardware components need to be computer controlled so as to freely communicate with each other; and yet, most of the outcomes are not promising (Sun & Venuvinod 2001). By and large, factories equipped with relatively simple machinery controls will require continuous attendance of human operators; for examples, textile mills, leather products, and medical appliances. With limited capital investments in production equipment, the main budget of their fixed costs lies on the workforce size (Techawiboonwong *et al.* 2006).

With regard to cost-effectiveness, labour planning always opts for the minimum amount of workers needed to deal with the daily operations, as well as the probable rate of disturbance (Lim *et al.* 2008). The workforce disturbance is often ascribed to absenteeism and turnover, which may result in considerable loss of productivity for any labour-intensive division (Easton & Goodale 2002). Buffering with redundant

Accounting is a generic term covering both the book-keeping and account aspects of an economic entity. According to Agboh (2007) Accounting is a systematic process of identifying, recording, measuring, classifying, verifying, summarizing, interpreting and communicating financial information. It reveals profit or loss for a given period, and the value and nature of a firm's assets, liabilities and owners' equity (Agboh, 2007). Accounting is a system meant for measuring business activities, processing of information into reports and

making the findings available to decision-makers (Shekhar, 2019). By these definitions, accounting is viewed as a system whose end result is to assist decision makers, necessitating improved ways of summarizing, analysing and reporting financial statements; automation provides such an improved means.

Automation is employing artificial intelligence software and robotic systems to mechanize various business processes; accounting can be automated (Rathmann, 2019). The above definition suggests humans by machines replacement, though some argue otherwise. According to Groover and Mikell (2014) automation is the technology by which a process or procedure is performed with minimal human assistance; suggesting non-total elimination of human input. Research by Baptiste (2018) assessed AI-powered accounting solutions like One Up, QuickBooks Online, SageOne, and Xero, ranking them based on their Accounting Automation Index (AAI) for transaction recognition and accounting accuracy. One Up displayed the highest efficiency at 95% indicating automated accounting posibility. Now, businesses save inventory processing time by using scanning guns to automatically record data. Ashak (2018), stated that the strategic use of inventory management systems can increase a company's profitability by 20 to 50 percent, which is compelling enough for businesses to make the switch. The notable advancement in science towards complete accounting automation, which threatens replacement of some human tasks and a shift in the duties of accountants, necessitates the need to determine the awareness of the accounting teacher and practitioner in automated accounting, especially in cost accounting and taxation which are highly prone to automation.

According to Accounting Technicians Scheme of West Africa, (ATSWA, 2009), Cost accounting is the application of accounting and costing principles, methods and techniques in ascertaining the cost and analysis of savings and or excesses as compared with previous experience or standard. The study of cost accounting automation is important in increasing the level of efficiency and effectiveness and to meet deadlines.

Tax accounting is a structure of accounting method focused on taxes rather than the appearance of public financial statements. Tax accounting is the means of accounting for tax purposes. It applies to everyone such as individuals, businesses, corporations and other entities. The purpose of tax accounting is to track funds (funds in as well as funds going out) associated with individuals and entities (Kagan, 2018). When tax accounting becomes more standardized, it becomes easily automated.

Business Education aims at; fostering a spirit of creativity and ongoing learning among teachers, encouraging them to innovate and improve their professional practices. The responsibility of the business education student is not only as a teacher of the "art" but also as a practitioner of the various component parts of the profession. According to William and Dambo (2016) business education prepares individuals for seamless entry into both industry and classroom settings as professionals. The program focuses on imparting essential business and vocational attitudes, understanding, knowledge, and skills. Therefore, this research will determine the level of awareness of business education graduate in automated accounting.

1.2 Statement of the Problem

In the wake of technological advancement, acquiring IT skill is crucial for graduates and students to stay competitive, especially in areas like financial technology. However, problem arises for curriculum planners, government, firms and business education graduates who are not well aware and prepared to use these skills. These problems include, loss of lucrative opportunities and struggle to meet the demands of modern business practices and international accounting standards that increasingly require automation for compliance. Hence the need for the study to assess the level of awareness of business education students in automated accounting for future functionality on graduation.

1.3 Purpose of Study

The study assessed the awareness of business education students in automated accounting for future functionality on graduation among universities in the South-East, Nigeria. Specifically, the study assessed:

a. The level of awareness of business education students in automated tax accounting for future functionality on graduation.

b. The level of awareness of business education students in automated cost accounting for future functionality on graduation.

1.4 Hypothesis

Ho_1: There is no significant difference between the mean responses of business education students in accounting automation based on location.

Ho_2: There is no significant difference between the mean response of male and female business education

students on accounting automation required for future functionality on graduation.

1.5 Scope of the Study

The geographical scope of this study covered all the public universities in the area of study. The content scope of the study was limited to the following areas in accounting; cost accounting and taxation accounting.

2.0 REVIEW OF RELATED LITERATURES

2.1 Concept of Accounting Automation

Automated accounting is an approach to maintaining up-to-date accounting records with the aid of accounting software. Business software of this type is often configured to allow for easy cross posting of receivable and payables, eliminating the need to enter multiple postings in order to keep accounting records in compliance with generally accepted accounting principles (Tatum, 2019). The process of automated accounting saves time when posting credits and debits. As against making entries into different books, most accounting software packages allow manual entry of the transaction in one field on one page. From there, the software automatically relates the transaction to all other relevant records within the software package (Tatum, 2019). By linking the software to credit cards, bank accounts and other cloud-based services, transactions could be automatically tracked, recorded, payments made and invoices disbursed. This is made possible by indexing each user and generating transaction specific invoice number. The company benefits from an increase of receipts on its receivables in a short amount of time, giving the business access to more cash in hand to manage the day-to-day operation. While Tatum (2019) believes in complete automation where data are automatically fed into the software, Weber (2011) opined that computerized or automated accounting comprises the use of computers in the processing of raw data into information that enables efficient and quick decision making through timely financial reporting and preparation of accounting reports. He argues that in computerized accounting, accountants feed transactions in computers and all the other steps are processed automatically thus reducing the cost that could be incurred in the steps. There are technologies that facilitate automated accounting some are discussed as components of automated accounting.

2.1.1 Components of Automated Accounting

These components are the various technologies that make partial or complete accounting automation possible. Törnqvist and Forss (2018), identified the following as main concepts recognized by practitioners, and have shown to be fundamental for automation; Cloud Accounting, Internet of Things (IoT), Blockchain and Big Data.

Cloud Accounting is the usage of cloud services within the accounting field where accounting software is internet based and the accounting data is stored on the cloud provider's server. Such solutions give the possibility for all parties of the accounting process, such as the accounting firm and their client, access to financial data regardless of their location (Dimitriu & Matei, 2014). Furthermore, cloud accounting provides enhanced communication between systems and contribute to automated file sharing between financial systems in real time (Prichici & Ionescu, 2015).

Internet of Things (IoT) is a system of interconnected devices where transfer and communication of real-time data is possible (Deb, 2016). This is usually through wireless transfers (Garrillo & Lopez, 2016). IoT aids accounting consultants in receiving relevant data directly from a device into the computer at fast rates (Deb, 2016), limiting manual data entry. The customers will have to interact with internet or transfer protocol systems for orders and payments. Barcode scanners will also fetch product details into the system automatically.

Blockchain is a digital ledger on which transactions are recorded and can be viewed by all who have access. Blockchain can provide functions of automatic information such as verifications, processing, storing, and reporting, and act as a self-sufficient accounting system. Hence, it could operate as autonomous software for verification, control and fraud prevention (Dai & Vasarhelyi, 2017; Carlozo, 2017). Using block chain in accounting, requires good technical knowledge of how it works for proper configuration to suit a firm's changing demands. Therefore, this knowledge is important for the business education accounting students.

Big Data is the concept of analysing a huge amount of structured and unstructured information with algorithms (FAR, 2016). Big data leans on the four V's; volume, variety, velocity and veracity, and can be described as significant volume of data derived from several sources which is produced in a rapid progress. (EY, 2018). In accounting, big data analysis aid bookkeeping by analysing the invoice, finding relationship with previous invoices, and proposing an entry for the current recordings to be attested (FAR, 2016). Big data is a technology embedded in certain enabled software.

2.1.2 Accounting Skills Needed by an Accountant for Automation

The concept of accounting automation has shown that the skills and knowledge required of an accountant are no longer the same as it used to be. Certain skills resulting from the introduction of automation in accounting is considered here. Robert (2018) identified the following:

General Business Knowledge: The present dynamic roles of accounting and finance professionals necessitated by frequent interaction with other departments require sound decision-making, negotiation and strategic-thinking skills as well as a general knowledge of the business in order to make financial advice. According to Deming (2017) the ability to provide counsel to the management requires seeing the big picture, from how each functional area works to the best way to acquire and retain talent.

Up-to-date Technology Expertise: Managers prefer employing skilled staff rather than outsourcing (Robert, 2018). The author stated that finance-specific software is compulsory for the accounting role. The following were listed as the various technological skills available to an accountant by Robert (2108); Advanced Excel ability, ERP experience (SAP, Oracle), Expertise in big data analysis; advanced modelling techniques and SQL, Knowledge of business intelligence software (IBM Cognos), Microsoft Visual Basic capability, Aptitude with Hyperion (for analyst and financial reporting roles), Microsoft Visual Basic skills, Knowledge of QuickBooks (for positions with small and midsize firms). These skills are needed in the following areas of accounting affected by automation.

2.2 Automation in Cost Accounting and Tax Accounting

This is the use of systems to manage cost accounting processes with or without human intervention. The program running in a server pulls all required information, processes them and may request human authorization for an output (Edwards, 2003). Advanced Cost Accounting (ACA) System is used for full and partial integration of cost accounting processes. The system uses Automatic Accounting Instructions (AAIs) that are the links between the day-to-day functions, chart of accounts, and financial reports. The system uses AAI to determine how to distribute General Ledger (G/L) entries that the system generates. Programs that post to specific G/L accounts use AAIs to create journal entries, create an AAI entry for each unique combination of company, transaction, document type, and G/L class. The automatic accounting instruction system allows separation of inventory and cost of goods sold (COGS) accounts by cost component such as materials, labour, or overhead. Since businesses are dynamic, the accountant should have the technical knowledge to modify the system to meet the change (Edwards, 2003).

Tax accounting automation is the use of advanced computer software to extract relevant financial documents and generate a tax return. The system at some stage, will need an operator's approval (Brante, 2009). The concept of automation as it affects accounting for the business education graduate is significant with regards to what they are being taught in school, what they will teach to other business students as teachers of the profession and how they will adjust to the work place practise of accounting on graduation.

3.0 Theoretical Frame Work

The theoretical frame work is includes; theory of job polarization and technology acceptance model theory.

3.1 Job polarization

The digitization and automation of professions has led to a phenomenon called job polarization. Autor in 2015 propounded the theory which describes the market as a construction of three categories of professions, the cognitive professions that needs high education and normally have high incomes; the manual handled and service emphasized occupations that are characterized by low education and low salary; and those characterized by routine tasks, average income and an average education. The cognitive occupations are difficult to substitute with computers, as well as the occupations with complete manual handling, while the routine tasks can be performed more efficient by technology. Job polarization arises when the automation of routine tasks increases, leading to increased demand in cognitive professions and employment in low education professions due to the displacement of the routine category. Hence, the middle educated and waged professions are the most affected by automation and that is where the accountants are positioned (Autor, 2015). As a result, accountants should train in analytical and cognitive skills in order to remain relevant. The efficiency of automated accounting may however be dependent on the attitudes among the users (Murtagh et al, 2015), necessitating a review into the technological acceptance of the accountants.

3.2 Technology Acceptance Model Theory

The Technology Acceptance Model (TAM) was developed in 1989 by Davies, Bagozzi & Warshaw and explain individuals' acceptance and beliefs towards new technology. TAM relies on two factors that are affecting individuals' attitude toward new technology, namely perceived usefulness and perceived ease of use. In the extended model, the factors such as job relevance, quality output and result demonstrability were also added because they were perceived as having affections on the acceptance (Davies & Venkatesh, 2000). TAM is significant in explaining that the accountants will be willing to adjust their roles in the wake of accounting automation when they perceive its usefulness, ease of use, job relevance, quality of output and result demonstrability as favourable, but will resist when perceived as unfavourable.

4.0 Review of Related Empirical Study

Skyler (2018) studied America on the future of accountancy profession and found that; automation will take over tasks such as entering data, creating electronic documents and producing receipts; secondly, cloud technology will change the way professionals store data, collaborate, and gather information. However, 89% or respondents opine that technology in accounting will create new opportunities, 75% have started using these technologies to ease job and save time so as to concentrate on adding further value for clients. They can now spend more time analysing accounts and giving business advice. This shows that the respondents are aware and prepared for automation, allowing for proper adjustment without loss of employment. However, some barriers to the adoption of these technologies are argued. Therefore, Gutierrez and Maria (2014) researched on Computer Accounting System (CAS) models, barriers to CAS adoption and relationship between firm demographical CAS adoptions, using survey research design and found that; age and educational attainment of the Chief Executive Officer (CEO)/ manager/ owner of businesses do not affect the business decision to adopt CAS, instead, the role of accountants, accounting professionals and industry associations is encouraging businesses to adopt CAS. This research is similar to the present research work as it shows that CEOs are not the major barrier to the adoption of automated accounting. Similarly, Mohammed, Effah and Abor (2011), researched on the role of electronic accounting (e- accounting) among businesses in Ghana. The survey collected data from 50 out of 200 sample size, and found that most businesses that give lot of importance to financial information, employ chartered accountants. Majority of the businesses use software for accounts receivables, accounts payables, inventory management, payroll, fixed assets management, bank reconciliation and cash management. The authors concluded that adoption of automated accounting would ensure proper accounting practices and that businesses with proper books of accounts are often capable of attracting external financing easily than those with no good records. Thus, businesses that maintain good accounting and management information tend to be viewed favourably by finance providers.

The foregoing suggests that, if CEOs are in support of automated accounting, they will look for those with requisite automation skills. The level of awareness of these accounting skills in Nigeria is quite different, according to the research of Akande (2011) on how accounting skill of entrepreneur is necessary for the success of small businesses of Nigeria based on survey research design, utilizing 140 small business owners from Ogun State, found that; entrepreneurs should focus on improving accounting skill in financial management and record keeping for better results, government of Nigeria should make preparation of financial statement compulsory. Akande's study reveals that several SMEs still struggle with financial statements preparation, besides non-accounting-automation. Similarly, a survey study conducted by Padachi (2012) on the financial and working capital management practices of 141 small medium enterprises and 12 mini case studies in Mauritius, found that small businesses managed by sole-proprietors do not have enough time to implement good financial records. This is more a reason to adopt automated accounting which they do not adopt. The realities of future implication on the adoption of automated accounting are TAM factor for its acceptance.

Simon (2018) conducted researched on; Is a future in accounting without human intervention possible? The Qualitative study through interview on companies in Belgium and Luxembourg found that; the accountant will be using automation for routine tasks, rather than being replaced by it. Tasks that require critical-thinking and creativity seem to be more difficult to be automated. In the coming years, the technology will be able to assist accountants in non-repetitive tasks. The business model of accounting firms will change and accountants who are not ready for automation will be at risk of being replaced by automation. This readiness includes acquisition of such skills as; IT, Programming, Social skills, Strategic planning skills, Digitalization, Accounting regulations, Market knowledge, Analytics, tax, Excel and Critical thinking skills. Accountants will shift to either advisory or consultancy. This implies modification of accounting education curriculum. However, the cost of implementing a

curriculum to capture accounting automation will need government intervention. The research of Yap and Thong (1999), the impact of government incentive programme on business computerization, showed that participation in a government computerization programme does not result in more effective information system. However, there is evidence to show that government incentives, in the form of subsidies, low- interest loans and technical expertise lower the barriers to computerization and make computerization more attractive to small businesses which lack financial resources and technical expertise to computerize their operations. Therefore, the government of Nigeria can encourage the training of accounting students, accounting worker, business owners among others, in the use and development of such automation components as Block Chain, Artificial Intelligence, Optical Recognition, Robotic Process Automation among others.

Herbert (2016) explored the possibilities for transforming the way professional work in the future, by using automation. The descriptive survey describes that since automation is used to eliminate routine and repetitive tasks, it will allow employees to focus on more creative, non-structured tasks that require more thinking. While focusing more on creative, non-structured tasks, the value of the accountant`s contributions will increase. Kim (2017) examined the relative quantities of jobs that are susceptible to become computerized in the future and concluded that jobs that require little creativity or complex training (routine occupations), are most likely to be replaced. Jobs that require critical thinking and human contact will not be easily automated. These occupations require high-level creativity and training. The author describes that repetitiveness, stability and structure are the characteristics of jobs that can be automated. In other words: routine production jobs can be performed by automation. The research of Wilson & Sangster, (1992) on the use of computer technology by the UK accounting profession and why the accounting profession should be aware of automation, further emphasised the importance of accounting automation. The respondents who were members of the Institute of Chartered Accountants of Scotland, identified the need to meet accounting deadlines and provision of quality and relevant information to clients as the most significant motivation for technological change. Big data and Expert system are examples of such technology. According to the research of Gamage (2016) on the latest developments in Big Data and its impact on accounting education in Scotland; the decision-aid is one of the greatest benefits of Big Data through enhanced data management. While Expert Systems assist accountants in analysis of complex data. 90 percent of the errors or accidents are caused by humans. Machine learning would be a solution to reduce these errors.

Moral Decision-Making

According to Omar (1993), Artificial Intelligence needs to possess four attributes to be able to make a valid moral judgment: knowledge of all relevant facts, un-biasedness, freedom from disturbing passion and the ability to vividly imagine the feelings and circumstances of the parties involved. According to the author, Artificial Intelligence is able to perform the first three conditions. However, the last condition involves emotions, which AI is not able to fulfil. Hence the relevance of Zarowin's study. Zarowin (1994) researched on the computer revolution in the accounting profession, by interviewing the Chief Executive Officer (CEO) of the Computer Associates International. The respondent recognized that until now, Artificial Intelligence could not perform accountants' most valuable functions which are interpreting and analysing financial information. The author argued that accountants should not worry about AI replacement, however, his finding seem to have been overtaken by current technology, not only that AI is able to interpret and analyse financial records, it is able to make some forecasts.

Future Role

Beaman & Richardson (2007) studied the role of the management accountants in the future and concluded that the accountant's role is mostly routine and therefore, need to develop skills regarding the use of AI if the employees want to keep adding value to the firm. The above research work recognized the need for universities to teach and to encourage the learning of non-conventional accounting skills for automated accounting in order to remain relevant. Similarly, El-Dalahmeh (2017) found that Jordian business environment both large and small companies desires new accounting graduates who have information technology knowledge and good understanding of computer application programs. This study, agrees with that of Davis (1999) and Albrecht &Robert (2000) which indicate that spreadsheet applications are the most important skills utilized by accountants. 85.7% of respondents also indicated the desire for accounting students to possess a minor in computer information technology. This would indicate that information technology considered imperative for accountants in order to perform their tasks. Therefore, the present research seeks to make the beneficiaries of the significance of this study aware to prepare for the use of automated accounting.

Implication on the Labour Market

Automated accounting has continued to contribute to job polarization, according to the findings of Rattunde

(2016) on the impact of automation on the employment in the United States. Automation has replaced some tasks, but also complemented other tasks. Formalized and codified tasks have already been automated, since machines represent less labour costs for the companies and are more accurate and more productive. While tasks that require flexibility, judgment, common sense, low-skilled manual jobs that require language recognition, social interactions and situational adaptability are difficult to automate. The findings of Rattunde (2016) is limited by time, in recent times, sophisticated machine learning AI provides the possibilities of handling tasks requiring social interactions, language recognition, judgement etc. an instance is the use of Chatgpt in language and social analysis.

Solutions to the Adverse Effects of Automation in Accounting

Törnqvist and Forss (2018), conducted a qualitative study on automated accounting in accounting firms. They found that accounting automation can result in loss of job for the unprepared. The authors recommended change in education to a demand-based education and future and current employees should have the necessary skills to work alongside machines as a panacea. The above research was limited to accounting firms and consultants; however, the current research work includes business education graduates who go into accounting. Therefore, it is necessary to adjust what the students learn in schools in order to properly prepare them for the demands of the accounting society.

5.0 METHODS

The adopted a descriptive survey design. The study was carried out in public universities that offer business education in South-East, Nigeria. The Universities include; Ebonyi State University (EBSU), Nnamdi Azikwe University, Abia State University (ABSU), Enugu State University (ESUT) and University of Nigeria Nsukka (UNN). The population of the study consisted of all final year students of Business Education in public universities within the South-Eastern part of Nigeria. The population is 164 final year students (2018/2019 session) in the area of study, this includes males and females who are indigenes of different states in the country, thereby making it an effective distribution. The population consists of UNN (31), EBSU (29), Unizik (65) (accounting option) (accounting option), ABSU (4) and ESUT (31). There was no sample because of the manageable size of the population.

Based on the reviewed studies structured questionnaire was prepared and issued by the researchers and the aid of three informed research assistants for data collection in accordance with International Accounting Education Standards, a pilot test was also conducted to test the reliability of the instrument. The instrument was validated by three experts, two from Business Education Department, University of Nigeria Nsukka and One from Computer Science Department, University of Nigeria Nsukka. Each validator was given a copy of the instrument to avoid bias and ensure clarity, correctness and suitability of the items of the instrument. The final copy was developed from implemented corrections. The categorization of the responses were; HA = Highly Aware, MA = Moderately Aware, SA = Slightly Aware and UA = Unaware.

Data collected was analysed using mean and standard deviation, while Chi-Square test was used to test the hypothesis at 0.05 level of significance. Chi-square was used because the location of the students are up to five (5) variables.

The decision rule was based on the mean of four points Likert scale in ascending order and the real limit of numbers as shown below:

Response Categories	Nominal Values (X)	Real Limit of Numbers
Highly Aware (HA)	4	3.5 – 4.0
Moderately Aware (MA)	3	2.5 – 3.49
Slightly Aware (SA)	2	1.5 – 2.49
Unaware (UA)	1	0.5 – 1.49

$$\frac{\Sigma X}{N} = \frac{HA\,(4) + MA\,(3) + SA\,(2) + UA\,(1)}{4} = \frac{10}{4} = 2.5$$

A criterion mean of 2.5 is indicative that the respondents are aware of an item in the questionnaire with such mean rating. More specifically, each response is categorized using the real limit of numbers as shown above.

6.0 RESULTS

Table 1: Mean and Standard deviation of respondents on the awareness of business education students in automated tax accounting for future functionality on graduation.

S/N	Item Statements	$\bar{X}$	STD	DECISION
1	As a business education student, I know what tax accounting is all about.	2.68	1.12	MA
2	I am aware of the use of expert system technology to gather and process tax information to give an output for decision making.	2.34	1.034	SA
3	I am aware of tax accounting software which need little or no human intervention in operation.	2.19	1.042	SA
4	I am aware that IT knowledge and skill is needed by the tax accountant due to automation.	2.66	1.097	MA
5	I am aware that automated tax accounting identify tax payers automatically.	2.25	.988	SA
6	I know of attempts by Governments in employing automation in tax collection and remittance.	2.15	.932	SA
7	I am highly aware that routine tax accounting processes are highly replaceable by machines.	2.27	.951	SA
8	Block chain technology is known by me and can be used to generate and read series of tax information of a firm to give advice to management.	2.21	1.041	SA
9	I am aware that automated tax accounting helps in preventing tax frauds.	2.49	1.064	SA
10	I am aware that most tax administrators are not happy with automated tax accounting because of the way loopholes are blocked.	2.40	1.007	SA
11	I am highly aware that tax accountants risk losing their jobs to automation	2.50	1.086	MA
12	My program offers courses on practical use of tax accounting software.	2.20	1.098	SA
13	My program collaborate with accountant firms that use automated tax programs.	2.24	1.018	SA
	Grand Mean	**2.35**		SA

Data presented in Table 1 whose mean ranges from 2.15 – 2.68 and grand mean of 2.35 shows that most of the respondents are slightly aware of automated tax accounting for future functionality on graduation. The standard deviation of the items which ranges from 0.932 to 1.12 indicates that the responses of the respondents are closely related.

Table 2: Mean and Standard Deviation of respondents on the awareness of business education students in automated cost accounting for future functionality on graduation

S/N	Item Statements	$\bar{x}$	STD	DECISION
14	I am aware that with Internet of Things (IoT), cost behaviour, pattern and activities can be synchronised allowing Expert System technology make cost accounting decisions.	2.46	1.054	SA
15	I am aware that cloud computing can be used to store large volume of cost details, compare and analyse them, such that the inefficiency of local storage is avoided.	2.40	1.051	SA
16	I am aware of current trends in transition to automated cost accounting.	2.35	1.060	SA
17	My course of study provides theoretical and practical knowledge of cost accounting software.	2.34	1.025	SA
18	I am aware that employers of accountants prefer human personnel in performing cost accounting functions than the use of automatic software.	2.20	1.007	SA
19	I am aware that costing of goods and services by organizations can be totally done online.	2.61	1.106	MA
20	I am aware that robotic software can track all payments, receipts and stocks in preparing a complete cost account	2.43	1.062	SA
21	I know most cost accounting skills needed for automation.	2.34	.982	SA
22	I already know that cost accountants need a basic programming skill to be able to work in automated organizations.	2.47	1.121	SA
23	I know about cost accounting automation and how to operate it.	2.07	1.029	SA
24	My institution collaborates with cost accounting firms that uses automated programmes in their operations to teach us practical knowledge.	2.04	.998	SA
25	Automated cost accounting processes achieve better results than manual processes.	2.54	1.109	MA
	Grand Mean	2.17		SA

Data presented in Table 2 whose mean ranges from 2.04 – 2.54 and a grand mean of 2.17 shows that most of the respondents are slightly aware of automated cost accounting for future functionality on graduation. The standard deviation of the items which ranges from 0.982 to 1.12 indicates that the responses of the respondents are closely related and can be trusted.

Test of Hypothesis

Table 5:

The Chi-Square test of the responses from the 5 locations of business education students on automated accounted (Ho_1) and

Chi-Square test of the responses of sex of business education students on automated accounting (Ho_2).

S/N	Item Statements	Chi-Square	DECISION Ho_1	DECISION Ho_2
1	As a business education student, I know what tax accounting is all about.	.000	reject	Accept
2	I am aware of the use of expert system technology to gather and process tax information to give an output for decision making.	.001	Reject	Accept
3	I am aware of tax accounting software which need little or no human intervention in operation.	.144	accept	Accept
4	I am aware that IT knowledge and skill is needed by the tax accountant due to automation.	.000	Reject	Accept
5	I am aware that automated tax accounting identify tax payers automatically.	.010	Reject	Accept
6	I know of attempts by Governments in employing automation in tax collection and remittance.	.000	Reject	Accept

7	I am highly aware that routine tax accounting processes are highly replaceable by machines.	.125	Accept	Accept
8	Block chain technology is known by me and can be used to generate and read series of tax information of a firm to give advice to management.	.029	Reject	Accept
9	I am aware that automated tax accounting helps in preventing tax frauds.	.000	Reject	Accept
10	I am aware that most tax administrators are not happy with automated tax accounting because of the way loopholes are blocked.	.050	Accept	Accept
11	I am highly aware that tax accountants risk losing their jobs to automation	.016	Reject	Accept
12	My program offers courses on practical use of tax accounting software.	.276	Accept	Accept
13	My program collaborate with accountant firms that use automated tax programs.	.013	Reject	Accept
14	I am aware that with Internet of Things (IoT), cost behaviour, pattern and activities can be synchronised allowing Expert System technology make cost accounting decisions.	.000	Reject	Accept
15	I am aware that cloud computing can be used to store large volume of cost details, compare and analyse them, such that the inefficiency of local storage is avoided.	.166	Accept	Reject
16	I am aware of current trends in transition to automated cost accounting.	.276	Accept	Accept
17	My course of study provides theoretical and practical knowledge of cost accounting software.	.013	Reject	Reject
18	I am aware that employers of accountants prefer human personnel in performing cost accounting functions than the use of automatic software.	.000	Reject	Accept
19	I am aware that costing of goods and services by organizations can be totally done online.	.166	Accept	Accept
20	I am aware that robotic software can track all payments, receipts and stocks in preparing a complete cost account	.010	Reject	Accept
21	I know most cost accounting skills needed for automation.	.027	Reject	Accept
22	I already know that cost accountants need a basic programming skill to be able to work in automated organizations.	.000	Reject	Accept
23	I know about cost accounting automation and how to operate it.	.001	Reject	Accept
24	My institution collaborates with cost accounting firms that uses automated programmes in their operations to teach us practical knowledge.	.002	Reject	Accept
25	Automated cost accounting processes achieve better results than manual processes.	.000	Reject	Accept
26	I am aware that advanced technologies are developed in operation of financial accounting.	.011	Reject	Accept
27	Knowledge of automation is important in financial accounting.	.054	Accept	Accept
28	I am aware that artificial intelligence is now being used in financial accounting to do automatic operations.	.040	Reject	Accept
29	I am aware that financial processes can be programmed and done by machines.	.000	Reject	Accept
30	I am aware that barcode scanners are used to automatically generate financial data for automated accounting.	.000	Reject	Accept
31	I am aware I need programming knowledge in financial accounting operations.	.000	Reject	Accept
32	I am aware automation is affecting financial accounting	.709	Accept	Accept
33	I am aware that the effect of automation on financial accounting can make me a less effective accountant.	.626	Accept	Accept
34	I am aware automation in financial accounting can lead to a cashless society.	.012	Reject	Accept

35	I am aware financial technology companies prefer IT skilled accountants.	.010	Reject	Accept
36	I know about audit accounting, but I don't believe automation can affect it.	.005	Reject	Accept
37	I am aware of the use of expert system in audit accounting	.072	Accept	Accept
38	I am aware expert system can be used to collect and analyse audit records.	.006	Reject	Accept
39	Expert system can be used to generate an audit opinion.	.014	Reject	Accept
40	I am aware organizations have different structures which affects the audit template or plan.	.005	Reject	Accept
41	I am aware I need a programming skill to modify the automated audit system to meet the organizational dynamic structure.	.000	Reject	Accept
42	I am aware automated auditing is a threat to auditors without an IT skill.	.000	Reject	Accept
43	I know what robotic process automation (RPA) is about in performing auditing.	.000	Reject	Accept
44	I know block chain technology can be used to generate and safeguard data needed for auditing.	.000	Reject	Accept
45	I am aware the accounting consultants/auditors will most probably be replaced by IT-consultants, due to routine tasks done.	.074	accept	Accept

Null Hypothesis One:

The decision is to reject the null hypothesis if the reported P-value of the Chi-Square test is less than 0.05 (level of significance) and to accept the null hypothesis if otherwise. The Chi-Square coefficient of the responses are mostly less than 0.05. P-value less than 0.05 significance level are 33 out of 45 items. Therefore, the decision is to reject the Null Hypothesis, this means that there is a significant difference between responses of business education students on accounting automated and their locations. This is due to their personal exposures, since items 17, 24 and 12 shows that the school program was not a source of their awareness.

Null Hypothesis Two:

The decision is to reject the null hypothesis if the reported P-value of the Chi-Square test is less than 0.05 (level of significance) and to accept the null hypothesis if otherwise. The Chi-Square Coefficient of the responses are mostly higher than 0.05. P-value higher than 0.05 significance level are 43 out of 45 items. Therefore, the decision is to accept the Null Hypothesis, this means that there is no significant difference between responses of male and female respondents.

7.0 Discussion on the Findings

The findings of the study are discussed in line with the specific purpose of the study and statement of hypothesis as follows;

The level of awareness of Business Education students in automated tax accounting for future functionality on graduation.

The findings revealed that most of the respondents answered slightly aware (9 out of 13 of the item statements) to automation in tax accounting. The respondents also indicated that their accounting program does not provide them with practical use of accounting software, and that the school program does not collaborate with accounting firms to offer practical experiences. This shows that the students that are aware of automation in tax accounting, got the knowledge by themselves. The students are unaware of the technologies that enable automation tax accounting such as; Expert System, Block Chain, Big Data among others, this ignorance, can lead to displacement in employment and functionality. According to Rathmann (2019) there are myriads of artificial intelligence (AI) application for accounting automation which can replace humans in accounting. The findings of this work is in agreement with Baptiste (2018) who carried out a test on AI application which could automate most routine tax accounting functions and concluded that accounting automation displaces tax accountants without automation skills. Automation therefore forces accountants into advisory roles, this is in line with the findings of Törnqvist and Forss (2018).

The level of awareness of business education students in automated cost accounting for future functionality on graduation.

The finding of the study on the awareness of business education students on automated cost accounting shows that the respondents answered slightly aware for half of the items (6 out of 12 of the item statements) that make up cost accounting automation, such as cost accounting software, expert system, cloud computing, block chain technology among others. This insufficient awareness level is basically due to the non-coverage of the program of study and personal in-exposure of the respondents. Therefore, the business education curriculum should provide vast coverage of emerging accounting technology. This is also in line with the postulation of Deming (2017) on the need for a general business knowledge by accountants for cost accounting automation, this is to enable the accountant to be flexible.

Ho_1: There is no significant difference between the mean responses of business education students in accounting automation based on location.

The findings of the study on the above stated hypothesis revealed that the locations of the students affected their knowledge on accounting automation. This is as a result of uneven distribution of environmental information other than what the school's curriculum provides.

Ho_2: There is no significant difference between the mean response of male and female business education students on accounting automation required for future functionality on graduation.

The analysis revealed that both males and females have very close knowledge of accounting automation. The both sex have similar interest in automation. This means that automation is not gender sensitive and the sex of a person does not give added advantage to the knowledge of accounting automation.

8.0 Conclusion

The following conclusions are made based on the findings of the study.

Sequel to the introduction of machines into accounting, the need to adjust the accounting procedure to that which machines understand becomes very necessary, leading to the need for the accounting personnel to learn new skills to keep up with the development. These skills includes; block-chain, Internet of things, programming, social skills, communication skills, critical thinking and analytic skills, big data, robotic process automation, enterprise resource planning experience, general business knowledge, cloud computing, among others. The major purpose of the study was to determine the level of awareness of business education students in automated accounting for functionality on graduation. The determination of this level of awareness was necessary so as to know what course of actions to take in the preparation and equipping of business education students for functionality as accounting educators and workers, as well as to better arm other beneficiaries with knowledge to make adjustments to fit into the accounting automation trend. The analysis of the collected data from the population of the study showed that most of the respondents were slightly aware of automation in tax and cost accounting. From the literature review, it was discovered that automation is still growing in the accounting profession and that most business prefers it to the traditional means of accounting. Also that currently automation can only be effectively used on routine accounting tasks. The study in summary shows that accountants who are unaware of accounting automation and therefore not skilled in automation may face the threat of displacement or redundancy.

9.0 Recommendation

Based on the findings of the study, the following recommendations were made:

1. Due to the importance and evolution of automation and its introduction to accounting various automation skills such as; software programming, block-chain building, cloud computing, internet of things, robotic process automation and information analytic skills should be introduced into the learning experience of the curriculum of the business education students of VTE since VTE is technically inclined.
2. The school authorities should liaise with ICT firms to provide periodic lectures and practical on automation skills in accounting for the students. These firms should also be affiliated to the school in a relationship that allows the industrial training students of business education to go to them for IT.
3. The students should be encouraged to study and learn about automation in accounting on their own through journals and other online materials.

4. The curriculum should be decongested with irrelevant courses in this 21st century and replaced with programming courses such as python, oracle etc.
5. The government should provide financial and legislative support to help procure necessary automation materials (such as barcode scanners, sensors etc) and support from firms so that students are exposed to practical operations of automation in accounting.
6. The programme of study should encourage business education students to produce accounting software or the like as part of the practical requirement of the programme of study.
7. Business education students should be exposed to the advantages automation offers to accounting in order to remove the misconception that automation is unfriendly. They should also be encouraged to think of ways to solve accounting problems through automation.

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