Original Article

THE EFFECTIVENESS OF AUTOMATED RECONCILIATION SYSTEMS ON THE WORK PERFORMANCE OF ACCOUNTANTS IN ANAMBRA'S TERTIARY EDUCATION SECTOR

IFEOMA A. NWACHUKWU

Business Education Department
Nwafor Orizu College of Education,
Nsugbe Anambra State, Nigeria
DOI:https://doi.org/10.5281/zenodo.16418845

Abstract: This study examined the extent of implementation of accounts reconciliation automation techniques on job performance of accounting officers in tertiary institutions in Anambra State. One research question guided the study and two null hypotheses were tested at 0.05 level of significance. Related literature pertinent to the study were reviewed which exposed the need for the study. Survey research design was adopted using a population of 593 accounting officers in all the six public tertiary institutions (two universities, two polytechnics and two colleges of education) in Anambra State. A sample size of 239 account officers was used for the study. The sample size was derived using proportionate stratified random sampling while the total accounting officers in each of the institutions was determined using percentage. A structured questionnaire developed by the researcher was used for data collection. Cronbach Alpha method was used to establish the reliability of the instrument. Reliability coefficient value of 0.87 was obtained. Data collected were analyzed using mean and standard deviation to answer the research questions and ANOVA to test the null hypotheses at .05 level of significance. Statistical Package for Social Sciences (SPSS) was used to analyze data collected. The results showed that accounts reconciliation automation are implemented at a low extent by account officers on their job performance in tertiary institutions in Anambra State. Types of institution and years of experience do not significantly influence the mean ratings of the respondents on the extent of their implementation of accounts reconciliation automation on job performance in tertiary institutions in Anambra State. Based on the findings, it was recommended that Nigerian Universities Commission, National Board for Technical Education and National Commission for Colleges of Education should lay emphasis on the proper accounting automation techniques and measuring of efficiency deviations to identify weaknesses in the process of managing institution's transactions.

Keyword: Accounts reconciliation automation, accounting officers and tertiary institutions.

Introduction

The adoption of accounts reconciliation automation in tertiary institutions has the potential to improve the job performance of account officers in several ways. Automated systems can streamline data entry, reduce the risk of

Original Article

human error, and provide real-time access to financial information, enabling account officers to make more informed decisions and respond to changing financial conditions more effectively. Accountants are more productive in a high speed work environment which leads to job performance. Job performance is the general attitude that people have about their jobs. Campbell et al (2015) stated that performance is what the organization hires one to do, and do well, and only actions which can be scaled and measured are considered to constitute performance. It is also the set of behaviors that are relevant to the goals of the organization or organizational unit in which a person works. This is because it highly influences the overall firm's performance and also functions as the key variable in work and organizational psychology. Job performance is the aggregated financial or non-financial added value by the employees in contribution to the fulfillment both directly and indirectly to the targeted organizational goals (Dajani, 2015). Accounting officer's engagement in tertiary institutions has a positive influence on institutional performance. Performance in a job is strictly a behavior and a separate entity from the outcomes of a particular job which relate to success and productivity. Having performance complements, such as automation, can also improve the productivity of accountants, because technologies can make their office work mobile. Accountants' job performance could be measured through annual report of their activities in preparing financial statements at the end of a period. Accountants often spend hours every month updating their books. By using accounting automation software, tedious tasks are reduced and sometimes even eliminated. In addition, learning to use various software programs often leads to personal growth (Sengupta, 2023). Accounting automation increases the likelihood that financial data is accurate, and as well increases productivity and job satisfaction. By automating financial record-keeping, accounting automation reduces the risk of human error which manual data entry is always vulnerable to. By automating routine tasks, an institution can reduce the manual labour required and free up time for analyzing data as well as revenue generating-activities. Automation in the accounting industry has allowed organizations to streamline financial management and make more informed decisions. Accounting automation refers to the use of technology to automate accounting tasks, such as data entry, reconciliation, and reporting. Account reconciliation is a crucial process in financial management, ensuring that records are accurate, consistent, and devoid of discrepancies. With the advent of technology, account reconciliation software has become a staple for many businesses. Account reconciliation software is designed to automate, streamline, and enhance the accuracy of the reconciliation process in financial accounting. This technology plays a pivotal role in comparing internal financial records against monthly statements from external sources, such as banks or other financial institutions, and the general ledger, ensuring consistency, correctness, and that all transactions align (Shirshikov, 2023). By bridging the gap between internal records and external financial statements, account reconciliation software significantly reduces the risk of financial errors, ensures regulatory compliance, and brings efficiency to a traditionally manual and time-consuming process. Accounts reconciliation is the matching and validating balances in the general ledger to external and internal sources or other independent calculations to ensure that month-ends and year-ends are closed accurately (Webster, 2023). Data sources used to remediate and reconcile account balances include sub-ledgers and fixed assets, bank statements and accounts receivable and payable schedules. For both internal and external sources, every balance must match its corresponding account in the general ledger. Without a proper, automated account reconciliation process, institutions may encounter a range of problems arising from large numbers of accounts and corporate entities and the complexity of sub-ledgers and other systems involved from payroll systems to bank statements;

Original Article

bottlenecks in the period-end close from unexplained exceptions, accounts requiring adjusting entries to balance out that prevent timely and accurate identification, review and reconciliation; fraudulent or negligent accounting practices that go undetected due to non-reconciled accounts, poor internal controls or lack of supporting documentation, commentary or calculations. Account reconciliation is the bedrock of accurate, efficient, compliant and timely financial statement delivery. Account reconciliation must be treated as a priority and critical path in the period-end close process to provide a complete and accurate picture of an institution's financial performance. Accounts reconciliation automation is a technique that involves using software to automatically reconcile bank statements and other financial accounts. This helps to ensure that the accounting records are accurate and up-to-date. Account reconciliation allows one to save time, money, and potentially costly errors caused by manual banking reconciliations. It can also help prevent skilled accountants from having to spend too much time on an administrative task, allowing them to focus on more important matters. Reconciling the accounts is a particularly important activity for organizations and individuals because it is an opportunity to check for fraudulent activity and to prevent financial statement errors. Reconciliation is typically done at regular intervals, such as monthly or quarterly, as part of normal accounting procedures. Automated account reconciliation can help reduce one's organization's overall financial risk. Account reconciliation system compares multiple sets of financial data to identify discrepancies, which enables institutions to catch errors and correct them quickly. Every accounting team strives to consistently complete its reconciliation process efficiently and without errors, which, when handled poorly, can snowball into larger issues later in the close (HighRadius, 2023). Thus it becomes important that organizations establish a strong system of controls within the accounting department to successfully maintain the company's financial records' accuracy, integrity, and compliance with no errors. The accounts reconciliation process gives finance and accounting team's confidence that their information is reliable and allows for the chance to see any mistakes or discrepancies that occur. It is the first step in an organization's financial close process. However, relying on manual reporting methods, such as spreadsheets, can lead to errors, lack of visibility, and compliance risk for the organization (Shirshikov, 2023). To mitigate these risks, organizations should consider adopting automated reconciliation solutions that offer accurate and timely financial close using different accounting reconciliation methods. Essentially, balance sheet reconciliations are essential during the financial close as they ensure the accuracy and integrity of an organization's financial statements. Reconciling balance sheets is the process of comparing and matching the balances of accounts on the balance sheet with the corresponding balances in supporting documentation. This ensures that the balance sheets is accurate and complete (Neetha, 2023). With technological advancements, the conventional challenges associated with balance sheet reconciliation are being met with a transformative solution: automation. Automation enhances the balance sheet reconciliation process's accuracy, efficiency, and effectiveness. By automating the reconciliation process, it ensures accuracy, transparency, and compliance in financial reporting. Automated reconciliation can speed up accounting processes, automatically checking bank statements against records in a company's accounts software. Reconciling an account helps ensure accuracy in the financial records of a business and an individual (Wann, 2023). It helps by verifying that all transactions are recorded accurately and any discrepancies are rectified. By carrying out regular reconciliations, it is possible to detect any potential issues before they become problematic or a costly mistake is made. Reconciliation also plays an essential role in helping businesses stay compliant with

Original Article

legal requirements and enabling them to easily track their financial performance over time and make informed decisions about their future strategies.

However, the extent to which account reconciliation automation techniques have been implemented and their impact on the job performance of account officers may vary across different tertiary institutions. Factors such as the institution's size, financial resources, technological infrastructure, and the specific needs and challenges of the accounting department can all influence the degree of automation and its impact on the accounting officers' performance (Andreassen, 2020). The level of implementation of account reconciliation automation techniques in tertiary institutions in Anambra state tends to be low. Finance and accounting are crucial parts of any tertiary institution's daily activity. Managing finances in an educational institution is a complicated task and time-consuming labour for the accounting staff. Making sure that all transactions are being processed correctly along with their recording is something that helps the administrators of tertiary institutions to have a real time view of the financial status of the institution. As one's institution grows, its accounting needs become more complex and harder to handle. Tertiary institutions are institutions of higher learning where knowledge is imparted to its seekers and researches are undertaken in various fields of human endeavour. They are the postsecondary level of the national education system, which include universities, polytechnics, colleges of technology, colleges of education, advanced teacher training colleges, correspondence colleges and such institutions as may be allied to them (Federal Government of Nigeria (FGN), 2014). These institutions may be publicly or privately owned and are meant to contribute to national development by developing physical and intellectual skills which will enable individuals to become self-reliant and useful members of the society. Tertiary institutions are established to meet the nation's need for socio-economic development through knowledge sharing, research and development. It is important to appreciate the fact that, for tertiary educational institutions to achieve their objectives effectively there is need to establish an effective accounting system to furnish the management with necessary analyses, appraisals, and recommendations for decision making (Modibbo, 2015). In tertiary institutions, account officers make sure that the financial records are kept for smooth running of the institution and accountability purposes. An account officer manages the account of an institution, and this involves monitoring the performance of the account and advising the institution on investments to undertake. Accounts officers in tertiary institutions include Bursars and Directors, Senior Accountants and Auditors, Accounts and Store officers and Cashiers and Clerks (Nwaigburu & Mark, 2014). Some of the records include student record, curricular record, evaluation records and financial records which relate to income and expenditure and include receipt for purchase, vouchers, retirement, contracts, donations and budgets. All these are recorded in the appropriate financial record for smooth running of an institution. Doing all of these manually are time intensive process that leave very little room for Chief financial officers and financial managers to analyze all the data and come up with useful insights. Accurate recording and storing of financial data is the crux of accounting. Most times, financial transaction problems may be viewed from three perspectives: bank problems, school management problems, and the student's problem (Gustafsson & Jerkinger, 2021). Human error occurs such that the actual amount paid is not what is recorded on the receipt issued by the bank as evidence of a transaction. There are also cases where students overpay or underpay and the bank is not aware of this due to the disconnection with the school. This is where automation comes into play. The financial activities of tertiary institutions have increased and most tertiary institutions have to resort to the adoption of account reconciliation automation techniques. However, the relevance and needfulness of these

Original Article

automation techniques on the job performance of account officers can never be over-emphasized. Their implementation in these institutions may equally vary. The influencing factor in the implementation of accounting automation techniques in tertiary institutions could be type of institution and years of experience. These variables are likely to affect accounting officers' mean ratings on the implementation of accounting automation techniques. Type of institution in this study means all conventional federal universities, polytechnics and colleges of education. Odimmega (2019) reported that there was a significant difference in the views of account officers in the universities, polytechnics and colleges of education on the adoption of international public sector accounting standards in tertiary institutions. This implies that the attitudes of governing council members of these institutions circumvent the ability of the institutions to follow the guideline and policies in implementing the accounting system to put in operation while preparing its financial statement. Type of institution may determine the extent the implementation of accounting automation by accounting officers enhances financial reporting in tertiary institutions. Another influencing factor could be years of experience. Years of experience in this study refers to level of experience acquired over months or years of actual practice and which, presumably, has resulted in superior understanding, performance or mastery. Sandra in Mgbe (2019) stated that experience is the process or fact of personally observing, encountering, or undergoing something. Experience refers to the knowledge and skills that one gains through doing something for a period of time. The knowledge, experience and expertise of accounting officers may determine the extent the implementation of accounting automation enhances financial reporting in tertiary institutions. According to Boger in Ile and Mbanugo (2022), Nigerian tertiary institutions do not attract grants from international agencies because of lack of internal transparency and accountability. Boger further stated that experienced accounting professionals can carefully adopt generally accepted principles in preparation of financial statements in order to ensure transparency and accountability of accounting information. The impact of accounts reconciliation automation on job performance is likely to vary depending on the specific tasks that are automated, the skills and experience of the accountants involved, and the overall organizational culture. However, there is no doubt that automation is having a significant impact on the accounting profession, and this is likely to continue in the years to come. Considering the above views, it seems that the implementation of accounts reconciliation automation techniques in tertiary educational institutions plays a significant role in ensuring every entry matches its corresponding transaction in the financial statements. These powerful tolls help ensure the accuracy of financial records and streamline accounting processes, hence, the need to ascertain the extent of implementation of accounting automation in tertiary institutions in Anambra State.

Statement of the Problem

Accounts reconciliation has become a daunting task for many tertiary institutions due to heterogeneity of data involved in the accounts reconciliation process coupled with the recent data deluge in many accounting departments. Tertiary institutions often face challenges when using automated reconciliation systems. Challenges include resistance to change, poor data quality and integrating with old systems. The school management at the bursary office records the receipt from the bank submitted by the students and issues another receipt to confirm the payment. Chances are their wrong documentation problems that have to do with poor documentation due to human errors and poor processes in school financial management. Long wait times at the bursary could also be caused by understaffing. The student problems on the other hand have to do with the loss or misplacing bank receipts or school receipts and the student stands the chance of being driven out of the exam hall if the problem

Original Article

is not rectified with the bursary office before the examination. There could also be embarrassment from the bursary department, such as wasting time, a mistake made in the receipt. The need of accounts reconciliation automation is due to the current account distribution which is not entirely easy. All these are factors that drive the use of accounts reconciliation automation techniques. Accounts reconciliation automation if implemented could satisfy these demands such as eliminating cash transactions of students, bridging the disconnect between bank and the institution, providing accuracy and security for all school transactions which may enhance an easy accounting and management of school financial database. There is need to find out whether tertiary institutions implements the technique. Therefore, this study was aimed at determining the extent of implementation of accounts reconciliation automation techniques by account officers in tertiary institutions in Anambra State.

Purpose of the Study

The main purpose of the study was to examine the implementation of accounts reconciliation automation techniques on job performance of accounting officers in tertiary institutions in Anambra State. Specifically the study sought to:

1. Find out the extent of implementation of accounts reconciliation automation on job performance of accounting officers in tertiary institutions in Anambra State.

Research Question

This research question guided this study:

1. What is the extent of implementation of accounts reconciliation automation on job performance of accounting officers in tertiary institutions in Anambra State?

Hypotheses

The following null hypotheses were formulated and tested at 0.05 level of significance:

1.   Accounting officers in universities, polytechnics and colleges of education do not differ significantly on the extent of implementation of accounts reconciliation automation on their job performance in tertiary institutions in Anambra State.

2.   There is no significant difference in the mean ratings of accounting officers on the extent of implementation of accounts reconciliation automation on their job performance in tertiary institutions in Anambra State based on years of experience.

Method

Survey research design was adopted in this study. The study was conducted in tertiary institutions in Anambra State. Anambra is a State in South Eastern Nigeria. The population of this study consisted of 593 account officers in all the six public tertiary institutions (two universities, two polytechnics and two colleges of education) in Anambra State. A sample size of 239 account officers was used for the study. The sample size was derived using the Taro Yamani formula. Thereafter, determination of percentage of total accounting officers in various institutions was used to draw the sample. Data for this study were collected using a structured questionnaire titled "Extent of Implementation of Accounting Automation Techniques in Tertiary Institutions (EIAATTI)". The respondents were requested to rate the items on a 4-point rating scale of Very High Extent (VHE), High Extent (HE), Low Extent (LE) and Very Low Extent (VLE) with values 4, 3, 2 and 1 respectively. Three experts in business education validated the instrument. Cronbach Alpha method was used to test reliability of the instrument which yielded coefficient values of 0.87. Out of the 239 copies of the questionnaire distributed, 217 (representing

Original Article

90.38 %) were duly completed, retrieved and used for data analysis. Data were analyzed using mean, standard deviation and ANOVA. The application of SPSS version 23 was used for data analysis. For the hypotheses, p-value was used for decision making. Where the calculated p-value was less than the stipulated level of significance 0.05 ($p < 0.05$), it implies that there was a significant difference between respondents' mean scores and the null hypothesis is rejected. On the other hand, if the p-value is greater than or equal to the alpha level of 0.05 ($p \geq 0.05$), it means that there was no significant difference in the respondents mean scores and is not rejected.

Results

Research Question 1

What is the extent of implementation of account reconciliation automation on job performance of account officers in tertiary institutions in Anambra State?

Table 1

Mean ratings of Account Officers on their extent of implementation of accounts reconciliation automation on job performance in tertiary institutions in Anambra State

N = 217

S/No Accounts reconciliation automation	Mean	SD	Decision
1. Comparing bank statements with accounting records	1.84	0.73	Low extent
2. Comparing accounts receivable with accounting records	2.04	0.59	Low extent
3. Reconciling accounts payable with accounting records	1.85	0.75	Low extent
4. Reconciling physical inventory count with accounting records	1.79	0.63	Low extent
5. Reconciling payroll records with bank statements	2.03	0.75	Low extent
6. Comparing an institutions credit card statements with accounting records	1.90	0.69	Low extent
7. Reconciling physical assets owned by the institution with the accounting records	1.96	0.66	Low extent
8. Reconciling expense reports with accounting records	1.89	0.72	Low extent
9. Reconciling receipts with accounting records	1.89	0.69	Low extent
10. Verifying the accuracy of financial statement by comparing balances of various accounts in the general ledger entries	1.99	0.69	Low extent
11. Matching transactions against supporting documents to confirm their completeness.	1.94	0.74	Low extent
Cluster Mean	**1.92**		**Low extent**

Table 1 show that the mean score of all the 11 items on accounts reconciliation automation range between 1.79 and 2.04 which indicate that each of them is implemented to a low extent. The cluster means score of 1.92 shows that all the accounts reconciliation automation are implemented to a low extent by accounting officers on their job performance in tertiary institutions in Anambra State. The standard deviations are within the same range showing that there is homogeneity in items amongst accounting officers responses indicating a greater consensus of opinion.

Test of Hypotheses

Original Article

Hypothesis 1

Accounting officers in universities, polytechnics and colleges of education do not differ significantly on the extent of implementation of accounts reconciliation automation on their job performance in tertiary institutions in Anambra State.

Table 2

Summary of ANOVA on accounts reconciliation automation implemented by accounting officers on job performance in tertiary institutions in Anambra State

Source of Variance	Sum of Square	DF	Mean Square	F	P-value	Decision
Between Groups	15.742	2	7.871			
				2.302	.102	Not Sig
Within Groups	1203.751	214	3.420			
Total	1219.493	216				

Table 2 shows that at 214 degree of freedom, type of institution do not significantly influenced the mean ratings of the respondents on the extent of their implementation of accounts reconciliation automation on job performance in tertiary institutions in Anambra State. F-ratio is 2.302 and P-value (.102) which is greater than the stipulated 0.05 level of significance (P-value > alpha level). Therefore, the null hypothesis is not rejected.

Hypothesis 2

There is no significant difference in the mean ratings of accounting officers on the extent of implementation of accounts reconciliation automation on their job performance in tertiary institutions in Anambra State based on years of experience.

Table 3

Summary of ANOVA on accounts reconciliation automation implemented by accounting officers on job performance in tertiary institutions in Anambra State

Source of Variance	Sum of Square	df	Mean Square	F	P-value	Decision
Between Groups	7.511	2	3.755			
				1.091	.337	Not Sig
Within Groups	1211.982	214	3.443			
Total	1219.493	216				

Table 3 shows that at 214 degree of freedom, experience do not significantly influenced the mean ratings of the respondents on the extent of their implementation of accounts reconciliation automation on job performance in tertiary institutions in Anambra State. F-ratio is 1.091 and P-value (.337) which is greater than the stipulated 0.05 level of significance (P-value > alpha level). Therefore, the null hypothesis is not rejected.

Discussion

Original Article

Results of the study indicated that accounts reconciliation automation techniques are implemented at a low extent by accounting officers on their job performance in tertiary institutions in Anambra State. This implies that accounting officers implemented accounts reconciliation automation at a low extent in comparing bank statements, accounts receivable and payable with accounting records, in matching transactions against supporting documents to confirm their completeness among others. This could lead to errors in the reconciliation process. This finding according to Obi and Anaege (2023) found that accounting professionals in Nigeria currently lack a sufficient level of awareness and understanding of AI technologies in accounting. In view of this, Muhammad (2023) stated that automated reconciliation has an impact on the continued use of automated reconciliation in institution's day-to-day operations.

Automatic bank reconciliation can help one avoid errors in the reconciliation process and ensure that one's process is accurate. It can also help prevent skilled accountants from having to spend too much time on an administrative task, allowing them to focus on more important matters. Ukpong, et al. (2019) asserted that automation can increase visibility into financial data by giving institutions greater insights into their financial performance. By automating the reconciliation process, it ensures accuracy, transparency, and compliance in financial reporting. Findings further revealed that types of institution and experience do not significantly influence the mean ratings of the account officers on the extent of their implementation of accounts reconciliation automation on job performance in tertiary institutions in Anambra State. It follows therefore, that the null hypothesis of no significant difference was accepted.

Conclusion

It is clear from the study that accounts reconciliation automation techniques have not been fully implemented in tertiary institutions. The low extent of implementation of accounts reconciliation technique suggests that there is significant opportunity for improvement in the accounting processes in these institutions. Manual accounts reconciliation can be a timeconsuming and error-prone process, leading to inefficiencies and potential financial discrepancies. Accounts reconciliation automation techniques are essential in the operations of an institution in this 21st century. Accounts reconciliation automation plays a fundamental role in ensuring that financial statements are reliable, detecting errors, preventing fraud, and maintaining compliance with regulatory requirements. Tertiary institutions that prioritize effective reconciliation practices put themselves in a strong position to make informed decisions, mitigate risks, and maintain the financial health necessary for long-term success. **Recommendations**

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

1.   Institutions should consider implementing account reconciliation automation tools to streamline and automate the process.

2.   They should provide training to staff on the benefits and use of account reconciliation automation techniques.

3.   Regular monitor and evaluate the effectiveness of account reconciliation processes and identify areas for improvement.

4.   The Nigerian University Commission (NUC), National Board for Technical Education (NBTE) and National Commission for Colleges of Education (NCCE) should lay emphasis on the proper accounting

Original Article

automation techniques and measuring of efficiency deviations to identify weaknesses in the process of managing institutions transactions.

REFERENCES

Andreassen, R. (2020). Digital technology and changing roles: a management accountant' dream or nightmare? Journal of Management Control, 31, 209-238.

Campbell, J. P., McCloy, R. A., Oppler, S. H., & Sager, C. E. (2015). A theory of performance:

In N. Schmitt & W. C. Borman (Eds.), Personnel selection in organizations (35 – 70). San Francisco: Jossey-Bass

Dajani, M. A. Z. (2015). The impact of employee engagement on job performance and organizational commitment in the Egyptian banking sector. Journal of Business and Management Sciences, 3(5), 138-147

Federal Republic of Nigeria (FRN, 2014). National policy on education. Lagos: NERDC Press.

Gustafsson, J. & Jerkinger, P. (2021). Automation in accounting. Master's Thesis in Business Administration. Jonkoping University

HighRadius (2023). A guide to automated accounting: Benefits and tips. Rachelle Fisher, AVP, Digital Transformation.

Ile, C. M., & Mbanugo, C. I. (2022). Extent of application of inventory management practices by stores officers in public tertiary institutions in South East, Nigeria. African Journal of Educational Management, Teaching and Entrepreneurship Studies, 4(210-225)

Mgbe, B. N. (2019). Managers rating of contribution of employees' participation in decision making on performance of small and medium scale enterprises in Anambra State. A Master's Thesis submitted to the Department of Technology and Vocational Education, Nnamdi Azikiwe University, Awka

Modibbo, S. A. (2015). Impact of internal audit unit on the effectiveness of internal control system of tertiary educational institutions in Adamawa State Nigeria. International Journal of Humanities Social Sciences and Education, 2(5), 140-156.

Odimmega, C. G. (2019). Adoption of international public sector accounting standards in financial reporting by account officers in tertiary institutions in South-East Nigeria. Dissertation submitted to the Department of Technology and Vocational Education, Faculty of Education Nnamdi Azikiwe University Awka.