Effect of Electronic Accounting Payroll System on Performance of University Teaching Hospitals in Kwara State, Nigeria

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Abstract
Teaching hospitals in Kwara State, Nigeria, face challenges in managing payroll, impacting financial performance and employee satisfaction. This study examined the impact of electronic accounting payroll systems on the performance of University Teaching Hospitals (UTHs) In Kwara State. Using a survey design, data collected from 178 respondents, including auditors, accountants, ICT staff, and senior employees, through closed-ended questionnaire was analyzed using descriptive statistics (mean and standard deviation) and inferential statistics (Ordinary Least Square regression analysis) to estimate all the hypotheses. Results showed that accounting payroll systems and web-management payroll systems (β = 0.040, p = 0.000; β = 0.071, p = 0.000) significantly influence UTHs performance in Kwara State, while payroll internal control systems do not (β = 0.420, p= 0.367). Therefore, the study concluded that accounting payroll system and web-management payroll system are good predictors of performance of UTHs in Kwara State, Nigeria. This implies that the more robust and efficient these payroll systems are, the better the performance of the hospitals. Whereas, the current internal control systems in place for payroll may not be effectively contributing to the performance outcomes of these hospitals. The study recommends UTHs in Kwara State to invest in and continue using electronic accounting and web-management payroll systems to enhance performance and sustainability.

Keywords: Electronic Accounting Payroll System, Web-Management Payroll, Internal Control System, performance, University Teaching Hospitals

1.0 Introduction

The performance of teaching hospitals is a critical indicator of the effectiveness and efficiency of healthcare systems globally, and especially within various regional contexts such as Africa and Nigeria. These institutions not only provide essential healthcare services but also serve as centers for medical training and research (Kohl, et al., 2019). Evaluating the performance of teaching hospitals involves assessing both their healthcare delivery and educational outcomes (Oyediran et al., 2023). In terms of global perspective, developed countries often have established systems and infrastructures that support the high performance of their teaching hospitals. However, African teaching hospitals face several challenges, including limited resources, infrastructure deficits, and administrative inefficiencies, which may affect their performance (Werunga, 2023).

In Nigeria, the situation is quite similar to the broader African context, where teaching hospitals also grapple with issues of funding, resource management, and the delivery of quality care. The performance of these institutions is often adjudged by their ability to provide quality patient care, maintain high educational standards, and spearhead innovations in medical research (Usman, 2022). Nigerian teaching hospitals are funded by the federal government and supervised by the Ministry of Health. They are expected to deliver high-quality health care services to the public and contribute to the development of the health sector and despite their meaningful contribution to the life of people,

many teaching hospitals in Nigeria suffer from poor performance, inefficiency, corruption, and mismanagement (Idowu & Okedere, 2020).

Parallel to the healthcare sector, electronic accounting payroll systems play a vital role in the financial management of organizations across the globe. In advanced nations, integrated and sophisticated payroll systems are in place, ensuring efficient payroll processing, compliance with regulations (Jibril, et. al., 2023), and robust internal controls. These systems are commonly characterized by automation and web-based management, which streamline payroll processes and enhance data security (Huy & Phuc, 2024). However, in developing countries, the adoption of electronic accounting payroll systems is still evolving. Challenges such as limited technological infrastructure, lower levels of digital literacy, and constrained financial resources can impede the implementation of advanced payroll solutions. Internal control systems in these settings may not be as developed, potentially increasing the risk of errors and fraud (Maulidi & Ansell, 2022).

In Nigeria, there is a growing awareness of the benefits of electronic payroll systems in both private and public sectors. The government and businesses are gradually adopting more reliable and automated payroll solutions, which aim to improve accuracy, accountability, and transparency in the management of employee compensation (Nwobu, 2022). Yet, the widespread adoption of such systems is still hampered by various economic and infrastructural challenges (Iyabode, 2023).

By conducting this study, researchers can provide evidence-based recommendations and guidelines for the adoption and effective utilization of electronic payroll systems in teaching hospitals in Nigeria, Africa, and globally. This can contribute to the advancement of healthcare management practices and ultimately enhance the performance of teaching hospitals in these regions.

Teaching hospitals are essential institutions for providing specialized health care services, education, and research. They also face many challenges, such as increasing demand, limited resources, regulatory compliance, and ethical issues. One of the key aspects of managing teaching hospitals is payroll, which involves calculating and paying wages, salaries, bonuses, deductions, taxes, and benefits for employees. Payroll affects the financial performance and sustainability of teaching hospitals, as well as the satisfaction and motivation of employees. Therefore, it is important to have an effective and efficient payroll system that can support the performance of teaching hospitals (Shanafelt, et al., 2019; Violina, 2020).
However, many teaching hospitals in Nigeria suffer from poor performance, inefficiency, corruption, and mismanagement. One of the factors that may contribute to these problems is the lack of a proper accounting payroll system that can handle the complex and diverse payroll needs of teaching hospitals. An accounting payroll system is a software application that is expected to use information technology resources to track and process payroll transactions, and if not otherwise, it may not help teaching hospitals improve their accuracy, timeliness, security, and transparency of payroll activities (Chude & Chude, 2022; Ike, et al., 2023). This accounting payroll system may not provide useful information for decision making, internal control, and compliance with accounting standards and regulations, as it was expected as argued in the literature by Gelinas, et al. (2018).

Another fundamental factor that may affect the performance of teaching hospitals is the quality of their payroll internal control system. A payroll internal control system is a set of procedures and practices that a teaching hospital may not sometimes follow which was originally designed with expectation to protect its payroll information and

prevent errors and frauds. If not properly designed, it may not help teaching hospitals in ensuring employees to get accurate pay with wrong time, taxes are withheld and not remitted properly, and payroll records may inaccurate and in complete (Prastivi et al., 2023; Salsabila, 2023).

Lastly, another critical issue that may impact the performance of teaching hospitals is the adoption and implementation of a web-management payroll system. A web-management payroll system is a web-based application that is expected to enable teaching hospitals to manage their payroll activities online can result to malfunctioning and not effective and efficient (Ahmed et al., 2023). A web-management payroll system may not help teaching hospitals streamline their payroll processes, reduce errors and frauds, not even enhance transparency and accountability, not comply with tax laws and regulations, and neither improve employee satisfaction and motivation (Yusuf et al., 2023; Iyabode, 2023).

Despite the potential benefits of these three factors on the performance of teaching hospitals, there is limited empirical evidence on their impact in Nigeria. Moreover, there may be challenges and barriers that hinder the adoption and implementation of these factors in Nigerian teaching hospitals. Therefore, there is a need to conduct a study on the examination of the impact of accounting payroll system, payroll internal control system and web-management payroll system on the performance of university teaching hospitals in Kwara State, Nigeria. The study will use a balanced scorecard approach to measure the performance of teaching hospitals from four perspectives: financial, customer, internal process, and learning and growth.

The general objective of this study is to examine the effect of electronic accounting payroll system on performance of performance of university teaching hospitals in Kwara State, Nigeria. specifically, the study aims to examine the relationship between accounting payroll system and the performance of university teaching hospitals in Kwara State, Nigeria; examine the relationship between payroll internal control system and the performance of university teaching hospitals in Kwara State, Nigeria; examine the relationship between web-management payroll system and the performance of university teaching hospitals in Kwara State, Nigeria. This study is poised to make significant contributions to the existing body of knowledge on accounting information systems within the Nigerian healthcare context. It focuses on the adoption and effectiveness of electronic accounting payroll systems in Nigerian teaching hospitals, assessing the impact of internal control and web-management systems on institutional performance. By identifying the facilitators and barriers to implementing these digital solutions, the research outcome would offer valuable insights for policymakers, healthcare managers, and accounting professionals, paving the way for enhanced operational efficiency and improved healthcare delivery. Its implications are expected to guide policy interventions, promote accountability, and foster better management practices in the health sector.

2.0 Literature Review

2.1 Conceptual Review

The variables utilized in this research were defined by examining the different descriptions provided for each variable (electronic accounting payroll systems and organizational performance) in the literature.

Electronic Accounting Payroll System

An electronic accounting payroll system (EAPS) is a software application that automates the payroll process (Palmer & Gupta, 2011). It allows businesses to track employee hours, calculate wages, deduct taxes and other deductions, and generate paychecks and reports, all electronically. EAPSs typically offer a variety of features,

including: Employee time tracking (EAPSs can integrate with time tracking systems to automatically track employee hours worked); Payroll calculation (EAPSs can calculate employee wages and deductions based on a variety of factors, such as pay rate, hours worked, taxes, and benefits); Paycheck generation (EAPSs can generate paychecks and direct deposit files electronically); Payroll reporting (EAPSs can generate a variety of payroll reports, such as payroll summaries, tax reports, and employee pay statements). EAPSs can offer a number of benefits to businesses, including increased accuracy, reduced time and costs, improved compliance. EAPSs are available for businesses of all sizes, and there are a variety of different products to choose from. When choosing an EAPSs, businesses should consider their specific needs and budget (Hashim & Piatti, 2018; Uvarova & Pobol, 2021). According to Aminudin and Saripudin, 2021), examples of electronic accounting system payroll software include ADP Workforce Now, Gusto, Paychex, QuickBooks Payroll and Xero Payroll

Accounting Payroll System

This is a software application that businesses use to manage and automate the process of paying employees. It calculates employee salaries and taxes, tracks hours worked, and issues payments through direct deposit or check (Turner et al., 2022). An accounting payroll system can help organizations improve their efficiency, accuracy, timeliness, and security of financial transactions and reporting. It can also support decision making, internal control, and compliance with accounting standards and regulations (Kabazarwe, 2019)

Payroll Auditing System

This is an analysis of a company's payroll processes, records, and systems to verify their accuracy, completeness, and compliance. A payroll audit can be conducted internally by the payroll department or externally by a third-party auditor (Wood, Brown, & Howe, 2013). A payroll audit helps identify and correct payroll errors, detect and prevent payroll frauds, ensure compliance with tax laws and regulations, and improve payroll efficiency and effectiveness. (Wood, et al., 2013).

Web-Management Payroll System

This is a web-based application that enables teaching hospitals to manage their payroll activities online (Oibo, 2020). It can calculate the salary of every employee per month and annum, taking into account factors such as shift differentials, allowances, deductions, taxes, and benefits. It can also store the records of employees' data and payroll history in a data mart, generate employees' pays lips and reports, and provide a user-friendly interface for accessing and updating data (El-Sayed et al., 2023). A web-management payroll system can help teaching hospitals streamline their payroll processes, reduce errors and frauds, enhance transparency and accountability, comply with tax laws and regulations, and improve employee satisfaction and motivation (Odeh, Miranda, Rao, Vaught, Greenman, McLean, & Moore, 2015).

2.2 Theoretical Review

Agency Theory

This study was built on agency theory and resource dependency theory. Agency theory, formulated by Michael C. Jensen and William H. Meckling in 1976, addresses conflicts of interest in principle-agent relationships. It suggests agents may not always act in the principal's best interest without proper incentives. In the context of electronic accounting, agency theory explains how systems can improve trust and performance in teaching hospitals. For instance, internal controls can reduce risks of misbehavior, while electronic payroll systems enhance accuracy and transparency. However, agency theory assumes agents are solely self-interested and overlooks other motivational

factors. In teaching hospitals, it explains how electronic systems aid monitoring and goal alignment but is just one of many perspectives needed due to the complex hospital environment and non-financial measures (El-Sayed et al. 2023).

Resource Dependency Theory

Resource Dependency Theory (RDT), developed by Jeffrey Pfeffer and Gerald Salancik in 1978, suggests that organizations rely on external resources, influencing their behavior. Organizations, including University Teaching Hospitals (UTHs), seek to minimize external dependency by forming alliances or integration. RDT is relevant to understanding how web management payroll systems impact UTH performance, as these systems are vital resources affecting employee compensation and data management (Dipu & Lange, 2023). However, RDT's focus on external dependencies may overlook internal factors influencing organizational behavior, such as internal capabilities. Despite this limitation, RDT offers insights into how organizations manage dependencies and make strategic resource allocation decisions. It highlights the importance of interorganizational relationships and power dynamics in organizational behavior (Dimunah, 2017)

2.3 Empirical Review

This section critically examines the existing literature regarding electronic accounting payroll systems and their implications for organizational performance, serving as the foundation for the hypotheses in this study. For instance, Violina (2020) conducted a study to explore the impact of accounting information systems payroll and internal control on employee performance in Nigeria Information pertaining to accounting information system payroll, internal control, and employee performance was gathered through surveys distributed to employees at PT Oasis Waters International Cabang Bandung. Subsequently, the collected data underwent analysis utilizing the multiple linear regression technique and the SPSS software. The findings indicated a significant relationship between the accounting information system payroll (X1) and internal control (X2) with employee performance.

Arnan, et al. (2021) assessed that design of a payroll accounting information system for Tantina Jatiluhur Foundation, Indonesia. The study used descriptive research method for data analysis and the study's results revealed that the designed system could facilitate the processing and presentation of payroll reports, addressing the need for improved payroll systems in many companies. In their studies, Aminudi and Saripudin (2021) evaluated the payroll system implementation at Tasnim, Fardiman, Sapuan, Nuzuliana, Ramdan & Partners. The study employed the descriptive qualitative case study with primary data, system analysis, flowchart, DFD, ERD, and design using Microsoft Access and Visual Basic 6.0. The findings revealed that the firm's payroll system faced challenges with manual procedures and inefficient time-consuming calculations.

Chude and Chude (2022) examine the impact of a computerized accounting system on the performance of oil and gas firms in Port-Harcourt, Nigeria. The study employed survey research design with a population of 100 staff from five firms, using questionnaires and simple linear regression for analysis. Findings revealed that there were positive significant effects of accounting software on accountability, productivity, and cost control. in a different view, Wibawa, et al. (2022) determined the effect of e-accounting and e-payroll on the effectiveness of internal control. The study's methodology based on census sampling of 57 employees, questionnaire data collection, and multiple regression analysis using IBM Statistics SPSS. The study's findings revealed that there are significant partial and simultaneous effects of e-accounting and e-payroll on internal control effectiveness, with these factors accounting for 92.5% of the variance.

Wirdiansyah and Munandar (2022) examined the effect of payroll accounting information system application on company's internal control effectiveness. Qualitative descriptive approach was adopted using a literature review. The study revealed that out of 10 studies reviewed, 7 found the payroll accounting information system to be effective in increasing internal control effectiveness, while 3 did not. Li and Fang (2022) evaluated the process perception accounting information system based on business process management. The study utilized case analysis method based on JKJT accounting informatization. The study found that there are four optimization effects of accounting informatization can be achieved by improving data authenticity, standardizing personnel roles, enforcing systems, and altering cost accounting practices.

In Ukrain, Pavelko, et al. (2023) evaluate payroll accounting in construction companies in Ukraine, focusing on organization and automation. The study methodology based on analysis of commonly used software products for payroll accounting and internal regulations. Study identified challenges in payroll automation and suggested solutions to enhance competitiveness and management. Syarifah and Zuraidah (2023) designed a payroll accounting information system for Ramli Collection using Microsoft Access and Visual Basic 6.0. the study utilized qualitative approach with observation and interviews, and data analysis through collection, reduction, presentation, and conclusion. The study found that Ramli Collection lacks a proper accounting information system, with manual processes and discrepancies in payroll functions, elements, and records.

Thalia, et al. (2023) ascertained the utilization of the payroll accounting system at PT Astra International Daihatsu Martadinata, alongside its juxtaposition with established theories. The employed approach in the study is descriptive qualitative in nature. The findings of the investigation indicate that the computerized payroll accounting system proves to be beneficial for organizations in the documentation of attendance records, while salary disbursements are facilitated via bank transfers to individual employee accounts, thereby yielding cost reductions due to the elimination of manual salary processes.

Prastiwi, et al. (2023) examined the influence of the payroll information system and wage information system on the effectiveness of internal control. The study involved 70 employees from PT Pratama Palm Abadi. Quantitative methods were used, and multiple linear regression analysis was employed for analysis. The first regression analysis indicated a significant effect of the payroll information system on the effectiveness of internal control, supporting H1. An increase in the payroll information system positively impacted the effectiveness of internal control.

Focusing on corporate value, Hardana, et al. (2023) investigated the impact of accounting information on corporate value and responsibility to stakeholders in cement industry companies listed on the Indonesia Stock Exchange (BEI) from 2017 to 2022. Data analysis included simple linear regression analysis for product correlation moment causality test and comparative analysis using one-way ANOVA independent sample at a 5% significance level. The findings revealed that cost accounting information, specifically in calculating the cost of goods manufactured, significantly influenced the increase in company value.

Akbar, et al. (2023) analyze the implementation of the payroll accounting system at CV Budi Karya. The study adopted the qualitative descriptive approach with observations, interviews, documentation, data collection, reduction, presentation, and verification. The study found that CV Budi Karya still uses a manual payroll system not aligned with theoretical models, hindered by human resource limitations. Salsabila (2023) determine the payroll accounting system and procedures for employees at PT. Makassar Cellular Telecommunications. Descriptive

qualitative analysis with primary data from observations, interviews, and documentation. The study found that the payroll system involves multiple functions and documents, with general journals for accounting records. Procedures cover time recording, payroll making, payment proof recording, and salary payments. Internal controls include organizational structure, authorization, recording procedures, and healthy practices, supported by technological advancements. Ike, et al. (2023) investigated the impact of the integrated personnel and payroll information system on public financial management in Nigeria. the study used mixed-method research design with a sample size of 251, using both qualitative and quantitative data, analyzed with descriptive evaluation and Chi-square. Findings from the study showed that IPPIS resulted in timely salary payments and reduced financial leakages, suggesting further policy learning and e-governance tools for full implementation

In Iraq, Ahmed, et al. (2023) explored the design, implementation, and evaluation of a Web-based Payroll Management System (WPMS) in the Kurdistan Region. The system was developed using HTML, PHP, JavaScript, jQuery, AJAX, and MySQL, and evaluated for usability with the system usability scale tool. The study's findings showed that WPMS efficiently calculates salaries, maintains records, generates payslips, reports, and statistics, and provides a user-friendly environment with an 87.8% usability satisfaction score. Contrarily, Ramadini and Mulyati (2023) assessed the effectiveness of the payroll accounting system on internal control of employee salary payments at BPKAD West Java Province. The study adopted quantitative research with purposive sampling of 100 salary managers, using primary data from questionnaires and SPSS version 23.0 for analysis. The study revealed that the payroll accounting system positively affects internal control, aligns with Indonesian standards, and enhances accuracy, timeliness, effectiveness, and target achievement in salary management.

In their own study, Rumapea, et al. (2019) evaluated internal control and payroll accounting systems in a hospital in Medan, Indonesia. The study employed the descriptive method using primary data from interviews and secondary data like organizational structure, with data collection through observation, interviews, and literature review. The study found that the honorarium employee payroll system is functioning well, evidenced by a flowchart showing proper separation of functions among departments, ensuring effective payroll processing and internal control. in their own view, Iyabode (2023) investigated the correlation between computerized accounting system (CAS) and payroll accounting within public institutions located in Osun State. Data collection was conducted via questionnaires, and subsequent analysis involved basic mean calculations and one-way analysis of variance (ANOVA). The study revealed a favorable association between CAS and payroll accounting in public institutions. In general, the results indicate that the integration of computerized accounting systems in public institutions in Osun State yields beneficial outcomes for payroll accounting, such as enhanced decision-making processes, improved performance, effective record-keeping, and reinforced control mechanisms and transparency.

Conceptually, previous studies reviewed have often focused on specific aspects of accounting systems. However, this study takes a comprehensive approach, examining the impact of various electronic systems, including accounting payroll, internal control, and web-management systems. Unlike above prior research conducted in different countries and industries, our study specifically investigated University Teaching Hospitals in Kwara State, Nigeria. This contextually relevant research provides insights for healthcare institutions facing unique challenges in the region. Notably, our comparative analysis is groundbreaking, as it has not been explored in Nigeria before. Furthermore, this study proviides innovative solutions and best practices for implementing electronic accounting

payroll systems in University Teaching Hospitals, addressing specific challenges within Nigeria's healthcare sector.

2.4 Conceptual Framework

This subsection depicts the interrelationships between the dependent variable, which is the performance of university teaching hospitals, and the explanatory variables, encompassing the various aspects of electronic accounting payroll systems, as illustrated in Figure 2.1.

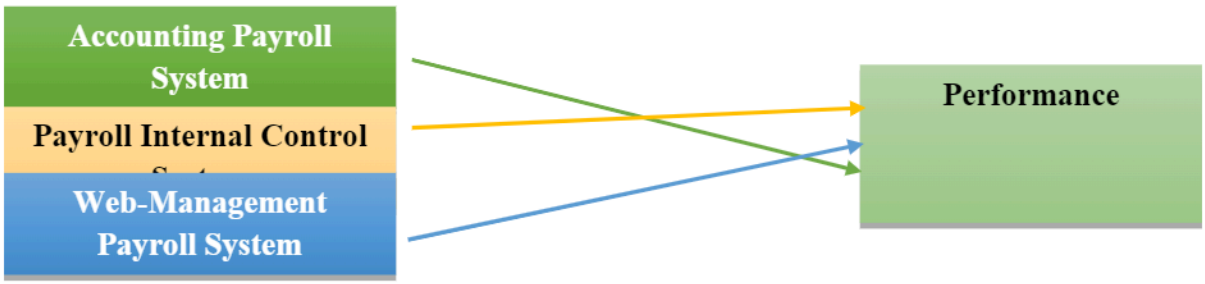


Figure 2.1: Relationship between electronic accounting payroll system and performance (proxied with balance scorecard four perspectives: financial, customer, internal process, and learning and growth).
Source: Authors' design (2024)

Figure 2.1 shows that all the explanatory variables (accounting payroll system, payroll internal control system & web-management payroll system) affect the performance of university teaching hospitals in Kwara State, Nigeria

3.0 Methodology

The study investigated the impact of electronic accounting payroll system on organizational performance using quantitative approach. The study adopted a survey research design. The population of the study is 320 staff of university teaching hospitals in Kwara State, Nigeria. The staff includes employees from different departments, such as accounting, ICT, auditing, human resources, and administration. The staff are involved in various aspects of payroll management and performance in teaching hospitals. The population size of the study is estimated to be 320 staff members. This estimate is based on the average number of staff per teaching hospital multiplied by the number of teaching hospitals in Kwara State. There are four university teaching hospitals in Kwara State: University of Ilorin Teaching Hospital, Kwara State University Teaching Hospital, Federal Medical Centre Ilorin, and Sobi Specialist Hospital. The average number of staff per teaching hospital is assumed to be 320. The sample size of the study is 178 staff members of University Teaching Hospitals in Kwara State. This was determined based on the draw from the sampling frame of 320 staff of various relevant departments participated in the survey. The sample size was determined using Taro Yamane's formula for finite populations: N = N / (1 + N * e^2). The sample size for this study is calculated as follows:

N = 320 / (1 + 320 * 0.05^2)
N = 320 / (1.8)
N = 177.7. Therefore, the sample size for this study is approximately 178 staff members.

3.1 Model Specification

The model of Violina (2020) was adapted for this study. Violina (2020) examined the impact of accounting information systems payroll and internal control on employee performance. The original model of Violina (2020) was represented as:

EPF = $\beta_0 + \beta_1$AISP + β_1IC +…….…… ……(3.1)

Where: Epf = Employee Performance, internal control (IC), AISP = accounting information systems payroll, $\beta 0$ = intercept (constant). This study modified the original model by incorporating web-management payroll to enhance its robustness and uniqueness compared to prior research. The revised model for this study is thus formulated as:

$PF = \beta_0 + \beta_1 AISP + \beta_1 PICS + \beta_1 WMP + e$ ……..……(3.2)

PF = Performance, AISP = accounting information systems payroll, PICS = payroll internal control system, web-management payroll (WMP), β0 = intercept (constant). e = stands for the error term.

3.2 Estimation Tests

This study utilized both descriptive and inferential statistics. Descriptively, mean and standard deviation values were calculated to summarize the respondents' responses. Additionally, the data's normality was assessed using skewness and kurtosis to measure the degree to which the distribution deviates from a normal distribution. To check for multicollinearity among the independent variables, the study employed the Pearson Correlation Matrix, and Cronbach's Alpha for reliability testing. For the inferential statistics, the study employed Ordinary Least Squares (OLS) regression analysis. It is preferred in many cases due to its simplicity, interpretability, and efficiency in estimating coefficients. Additionally, OLS regression provides unbiased estimates of the coefficients when the model assumptions are met, making it a suitable choice for this study's inferential analysis.

4.0 Results and Discussion

4.1. Descriptive Statistics

This section presents summary of descriptive analysis of data collected for each of the variables employed in this study.

Table 1: Descriptive Statistics

Items	APS	PICS	WMPS	PERF
Mean	3.421	3.353	2.765	3.348
Std. Deviation	0.741	0.875	0.952	8670.
Skewness	-0.782	-0.293	-0.720	-0.184
Kurtosis	0.335	-0.358	3.405	-1.152

Source: Authors' computation (2024)

Table 1 presents statistical data on the independent variables Accounting Payroll System (APS), Payroll Internal Control System (PICS), and Web-management Payroll System (WMPS), and their impact on the dependent variable, Performance (Perf). The mean scores range from 2.765 to 3.421, indicating a satisfactory response level. Scores above 3.67, as per Nik, Jantan, and Taib (2010), signify a high level, aligning with the variables' mean values. The

data also meets the normal distribution criteria, with skewness and kurtosis falling within -1 to +1, as outlined by Hair, Anderson, Tatham, and Black (1998), enabling the use of parametric statistical procedures.

4.2. Reliability Test

Prior to the analysis of the data collected through questionnaire, the instrument was subjected to reliability test using Cronbach Alphas. Table 2 shows the Cronbach's Alpha for all variables

Table 2.: Reliability Statistics

S/N	Variables	Cronbach's Alpha	No of Items
1	Accounting Payroll System (APS)	0.766	7
2	Payroll Internal Control System (PICS)	0.799	6
3	Web-Management Payroll System (WMPS)	0.877	6
4	Performance (Perf)	0.863	7

Source: Authors' computation (2024)

From Table 2, the initial numbers of statements were considered in order to obtain a reliable Cronbach alpha coefficient. Meanwhile, the statistics show that all variables exhibited values ranging from 0.766 to 0.863 which suggested that the instruments are reliable and consisted within acceptable research standards. This is higher than benchmark of 0.7 (Ritter, 2010). This implies that Cronbach's Alpha is considered acceptable which suggested that the data are reliable and consistent with acceptable standards.

4.3 Inferential Statistical Analysis

Table 3 shows participant responses averaging between 2.765 and 3.421, indicating a satisfactory level. The high value of 3.421 is noteworthy. This section provides context for understanding the correlation between variables and includes inferential statistics examining research hypotheses.

Table 3: Pearson Correlation Matrix

Variables	**APS**	**PICS**	**WMPS**	**PERF**
Accounting Payroll System (APS)	1.000			
Payroll Internal Control System (PICS)	0.045	1.000		
Web-Management Payroll System (WMPS)	-0.082	0.332	1.000	
Performance (Perf)	0.118	-0.172	0.642	1.000

Source: Authors' Computation, 2024.

Table 3 displays Pearson correlation values for explanatory variables, indicating the possibility of a perfect linear relationship between them. Linear regression requires the absence of multicollinearity among independent variables for accurate estimation. The coefficient ranges from +1 to -1: +1 signifies a perfect positive linear relationship, -1 a perfect negative relationship, and 0 no linear relationship. Table 3 shows no perfect relationship between independent variable pairs. Gujarati (2009) notes multicollinearity is concerning when correlation exceeds 0.8 (Kennedy).

Table 4: Ordinary Least Squares (OLS) Regression Result for Electronic Accounting Payroll System and Performance

Variables	Coefficients	T-Statistics	Sig.
(Constant)	2.524	10.569	0.000
Accounting Payroll System (APS)	0.040	4.264	0.000
Payroll Internal Control System (PICS)	0.420	0.907	0.367
Web-Management Payroll System (WMPS)	0.071	0.544	0.000

Source: Authors' Computation, 2024

Table 4 exhibits the OLS regression coefficients of the model and the level of significance. The regression table showed the results of hypotheses tested and the significant relationship between the computerized accounting system (independent variables) and performance (dependent variable).

H_{01}: The accounting payroll system (APS) has no significant impact on the performance of University Teaching Hospitals (UTHs) in Kwara State, Nigeria. Table 4 shows that the coefficient for the accounting payroll system (APS) is 0.040, with a t-value of 4.264 and a p-value of 0.000. This indicates that the accounting payroll system (APS) is statistically significant. The study rejects the null hypothesis (H1) and accepts the alternative hypothesis, suggesting a significant positive relationship between the use of APS and the performance of UTH. This implies that APS implemented would enhance the performance of UTH and might improve efficiency in payroll management, reducing errors, and ensuring timely payments of salaries to employees. This efficiency can improve employee satisfaction and morale, ensure cost savings for the hospital, which can be redirected towards improving healthcare services and facilities, and ultimately enhancing overall organizational performance. This finding is consistent with the research of Violina (2020), Ike et al. (2023), Chude and Chude (2022), and Ramadini and Mulyati (2023). The relationship between the Payroll Internal Control System and performance is supported by agency theory, which suggests that effective control mechanisms can align the interests of employees and the organization, leading to improved performance.

H_{02}: The Payroll Internal Control System (PICS) has no significant impact on the performance of University Teaching Hospitals (UTHs) in Kwara State, Nigeria. The coefficient for the Payroll Internal Control System (PICS) is 0.420, with a t-value of 0.907 and a p-value of 0.367. Since the p-value is greater than the typical significance level (e.g., 0.05), PICS is not considered statistically significant. Therefore, we fail to reject the null hypothesis (H2), suggesting that there is no significant relationship between the use of PICS and the performance

of UTHs. The implications of these findings are fundamental. Firstly, it suggests that while the accounting payroll system (APS) plays a crucial role in enhancing performance, the implementation of the Payroll Internal Control System (PICS) may not directly contribute to improving performance in UTHs. By implications, there may be an increased risk of errors and fraud in payroll processing. This might lead to financial losses for the hospital and erode trust among employees. In addition, a lack of significant impact of PICS may indicate challenges in ensuring compliance with regulations and internal policies. This can affect the hospital's accountability and reputation, potentially leading to legal issues. Also, this could imply that other factors, such as organizational culture, leadership, or external factors, may have a more significant impact on performance than internal control systems alone. Additionally, the study's findings diverge from previous research by Prastivi et al. (2023), Salsabila (2023), and Ramadini and Mulyati (2023), who may have found a positive relationship between PICS and performance in different contexts or industries. This highlights the importance of considering specific organizational contexts and the complexity of factors influencing performance in healthcare settings.

H_{03}: The Web-Management Payroll System (WMPS) has no significant impact on the performance of University Teaching Hospitals (UTHs) in Kwara State, Nigeria. The coefficient for WMPS is 0.071, with a t-value of 0.544 and a p-value of 0.000. This indicates that WMPS is statistically significant, leading to the rejection of the null hypothesis (H_{03}). Thus, the use of WMPS is associated with a positive and significant impact on the performance of UTHs. The implications of these findings suggest that the adoption of WMPS can contribute positively to the performance of UTHs in Kwara State. By implication, a web-management system institutionalized has potency in improving communication and collaboration among hospital staff, departments, and external stakeholders. This can lead to more efficient workflows, better coordination of care, and ultimately, improved patient outcomes. it might have attributed to the system's ability to streamline payroll processes, enhance data accuracy, and improve overall efficiency in managing employee compensation. The findings align with previous research by Ahmed et al. (2023) and Iyabode (2023), which also found a positive relationship between WMPS and organizational performance. Moreover, the support for this relationship by resource dependency theory reinforces the idea that organizations, including UTHs, rely on external resources such as technology (in this case, WMPS) to improve their performance. This highlights the importance of investing in and leveraging technology which lead to enhancement of organizational efficiency and effectiveness in health sectors.

5.0 Conclusion and Recommendations

5.1 Conclusion

The results of the study indicates that there is a significant positive relationship between the use of accounting payroll system (APS) and web-management payroll system (WMPS) and the performance of UTHs. However, there is no significant relationship between the use of payroll internal control system (PICS) and the performance of University Teach Hospital (UTH) in Kwara State, Nigeria.

5.2 Recommendations

In respect of the above conclusion made from the findings of this study, the study therefore provides the following recommendations:

University Teaching Hospitals (UTHs) in Kwara State, Nigeria should continue to use and invest in accounting payroll system (APS) and web-web-management payroll system (WMPS) to improve their performance. Other

universities and healthcare institutions in Nigeria can learn from UTHs' experiences and adopt APS and WMPS to improve their own performance.

Additionally, UTHs in Kwara State, Nigeria should continue to explore technological advancements and accounting software such as web-management payroll systems (WMPS), which have been found to positively impact performance.

By following these recommendations, UTHs in Kwara State and Nigeria at large can continue to improve their accounting payroll systems which could lead to their overall performance.

References

Ahmed, A.M., Mohammed, C.N. & Ahmad, A.M. Web-based payroll management system: design, implementation, and evaluation. *Journal of Electrical Systems and Inf Technol* 10, 17 (2023). https://doi.org/10.1186/s43067-023-00082-5

Akbar, M. F., Nurodin, N., & Sulaeman, S. (2023). Implementation of the payroll accounting system analysis at CV Budi Karya. *International Journal of Accounting and Information Systems*, 53, 100914.

Arnan, I., Almaretha, E. D., Brata, I. G. P., & Mulyati, I. (2021). Payroll accounting information system design at the geographical perspective of Tantina Jatiluhur Foundation Indonesia. *International Journal of Accounting and Information Systems,* 49, 100763.

Chude D.I., Chude N.P. (2022), Effect of Computerized Accounting System on Organisational Performance of Oil and Gas Firms in Port Harcourt, Nigeria. *British Journal of Management and Marketing Studies* 5(3), 66-88. DOI:10.52589/BJMMS- IJAK3EZU.

El-Sayed et al. (2023). Web-based payroll management system: design, implementation and evaluation of a data mart model for teaching hospitals in Egypt. *Journal of Engineering and Science in Technology and Innovation,* 2(1), e00082-e00082. https://doi.org/10.1186/s43067-023-00082-5

Hardana, A., Utami, T. W., & Hasibuan, L. (2023). Accounting information in improving corporate values and responsibility to stakeholders in cement manufacturing companies in Indonesia. *Journal of Management Science (JMAS)*, *6*(2), 233-231.

Hashim, A., & Piatti, M. (2018). Lessons from reforming financial management information systems: a review of the evidence. *World Bank Policy Research Working Paper*, (8312).

Huy, P. Q., & Phuc, V. K. (2024). Sustainable Decision Making in The Time of Uncertainty: Does Moral Intelligence Make It Different? *Pacific Asia Journal of the Association for Information Systems*, *16*(1), 8.

Idowu, S. O., & Okedere, M. A. (2020). Poor performance, inefficiency, corruption, and mismanagement in teaching hospitals in Nigeria: A call for improved corporate governance. *International Journal of Health Governance,* 25(2), 189-203.

Ike, G. U., Inakefe, G. I., Bassey, V. U., & Mbonu, F. I.. (2023). *Integrated Personnel and Payroll Information System and Public Financial Management in Nigeria's Public Service*. *20*(3), 53–84. https://doi.org/https://doi.org/10.31920/2516-5305/2023/20n3a3

Iyabode, K. O. (2023). The relationship between computerized accounting system (CAS) and payroll accounting in public institutions in Osun State. *International Journal of Accounting and Finance, 35(1), 1-10.*

Izuchukwuu, A., & Patricia, B. (2022). The role of accounting payroll systems in enhancing accuracy, timeliness, security, and transparency in teaching hospitals. *Journal of Accounting Technology,* 16(3), 45-58. https://doi.org/10.10.2022/jat.2022.003

Jibril, K., Safari, A., Shahin, A., & Hamdan, M. (2023). Risk-based human capital management in the ICT companies in Isfahan: A mixed-method approach. *Human Systems Management*, *42*(1), 55-71.

Kabazarwe, M. (2019). The effect of computerized accounting system on the quality of financial reporting in corporate utilities: a case of *National Water and Sewerage Corporation, Mbarara Branch.*

Kohl, S., Schoenfelder, J., Fügener, A., & Brunner, J. O. (2019). The use of Data Envelopment Analysis (DEA) in healthcare with a focus on hospitals. *Health care management science*, *22*, 245-286.

Maulidi, A., & Ansell, J. (2022). Corruption as distinct crime: the need to reconceptualize internal control on controlling bureaucratic occupational fraud. *Journal of Financial Crime*, *29*(2), 680-700.

Nwobu, A. (2022). Automated payroll solutions: Improving accuracy, accountability, and transparency in employee compensation management. *Journal of Accounting and Information Systems,* 24(2), 123-138. https://doi.org/10.1016/j.jais.2022.02.003

Odeh, H., Miranda, L., Rao, A., Vaught, J., Greenman, H., McLean, J., ... & Moore, H. M. (2015). The Biobank Economic Modeling Tool (BEMT): Online financial planning to facilitate biobank sustainability. *Biopreservation and Biobanking*, *13*(6), 421-429.

Oibo, J. O. (2020). Design and Implementation of a Web-Based Health Care Records Management System. ir.mtu.edu.ng

Oyediran, O. O., Adeyemi, A. O., Ademuyiwa, I. Y., Fawole, I. O., Afolabi, E. K., Oyibocha, E. O., ... & Adesina, S. A. (2023). Perception and Satisfaction with Nursing Care Among Pregnant Women Attending Antenatal Clinic at a Teaching Hospital in South Western Nigeria. *Western Journal of Medical and Biomedical Sciences*, *4*(3-4).

Palmer, R. J., & Gupta, M. R. (2011). Technology-Driven Convergence of Business Processes in the Acquisition Cycle: Implications for Accountants and Educators. *Journal of Emerging Technologies in Accounting*, *8*(1), 65-87.

Pavelko, I. V., Blyshchyk, L. V., & Savchuk, L. P. (2023). Evaluation of payroll accounting of construction companies, focusing on the aspects of organization and automation in the competitiveness potential management. *Journal of Accounting and Finance, 33(1), 72-85.*

Prastiwi, R. R., Romli, R., & Meiriasari, E. (2023). The influence of payroll information system and wage information system on the effectiveness of internal control. *Journal of Accounting and Auditing Research, 10(1), 1-10.*

Ramadini, D., & Mulyati, I. (2023). The effectiveness of the utilization of the payroll accounting system on internal control of employee salary payments at BPKAD West Java Province. *International Journal of Accounting and Information Technology, 14(1), 1-15.*

Rumapea, D., Bagariang, M., Hemalli, R., Purba, N. M., Jamaluddin, J., Purba, M. A., Pasaribu, B., & Sagala, W. (2019). Evaluation of internal control and payroll accounting systems in hospital in Medan, *Indonesia. Journal of Accounting and Finance, 31(2), 155-170.*

Salsabila. (2023). Payroll accounting system and procedures for employees at PT Makassar Cellular Telecommunications. *Jurnal Akuntansi dan Keuangan Indonesia,* 27(2), 155-170.

Shahin, M., Chen, F. F., Hosseinzadeh, A., Koodiani, H. K., Shahin, A., & Nafi, O. A. (2023). A smartphone-based application for an early skin disease prognosis: Towards a lean healthcare system via computer-based vision. *Advanced Engineering Informatics*, *57*, 102036.

Shanafelt, T. D., Schein, E., Minor, L. B., Trockel, M., Schein, P., & Kirch, D. (2019, August). Healing the professional culture of medicine. In *Mayo Clinic Proceedings,* 94 (8), 1556-1566). Elsevier.

Syarifah, S., & Zuraidah, Z. (2023). Design of payroll accounting information system using Microsoft Access and Visual Basic 6.0 on the Ramli Collection. *International Journal of Accounting and Information Technology, 12(1), 1-10.*

Thalia, A. P., Kaunang, J. R. M., & Kalalo, V. A. (2023). Application of payroll accounting system at PT Astra International Daihatsu Martadinata. Jurnal Akuntansi dan Keuangan Indonesia, 27(1), 1-10.

Turner, L., Weickgenannt, A. B., & Copeland, M. K. (2022). *Accounting information systems: controls and processes*. John Wiley & Sons.

Usman, H. N. (2022). *Appraisal of Techno-Pedagogical Competence of Pre-Service Teachers in Tertiary Institutions in Niger State, Nigeria* (Doctoral dissertation).

Uvarova, O., & Pobol, A. (2021). SMEs Digital Transformation in the EaP countries in COVID-19 Time: Challenges and Digital Solutions. In *Eastern Partnership Civil Society Forum. Obtenido de https://eap-csf.eu/wp-content/uploads/SMEs-digital-transformation-in-the-EaP-countries-during-COVID-19. pdf.*

Violina, T. (2020). The effect of accounting information systems payroll and internal control on employee performance. *International Journal of Accounting and Auditing Research,* 7(1), 1-10.

Werunga, K. P. (2023). Evaluation of Hospital Surge Management Strategies for Coping with Mass Casualty Incidents along Nakurueldoret-Malaba A-104 Road, Kenya.

Wibawa, R. I., Ali, M. K. A., Permada, A. R., & Yasin, R. M. (2022). The effect of e-accounting and e-payroll on the effectiveness of internal control. *Journal of Accounting and Auditing Research, 8(1), 1-10.*

Wirdiansyah, Y., & Munandar, F. (2022). The effect of application of payroll accounting information system in increasing the effectiveness of company's internal control. *Jurnal Akuntansi dan Keuangan Indonesia, 26(2), 271-282.*

Wood, J., Brown, W., & Howe, H. (2013). IT Auditing and Application Controls for Small and Mid-Sized Enterprises: Revenue, Expenditure, Inventory, Payroll, and More (Vol. 573). *John Wiley & Sons.*

Yusuf, Z., Nawawi, A., & Puteh Salin, A. S. A. (2023). *The effectiveness of payroll system in the public sector to prevent fraud*. *30*(2), 404–419. https://doi.org/10.1108/JFC-08-2017-0075