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Workplace digitalisation and operational effectiveness in private healthcare institutions in Bayelsa state

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ABSTRACT
This study investigates the relationship between workplace digitalisation and operational effectiveness in private healthcare institutions in Bayelsa State, Nigeria. The specific objectives include determining the relationship between hardware and operational effectiveness, and the relationship between software and operational effectiveness. A descriptive survey research design was adopted, with a study population of forty-eight managerial employees from selected private healthcare institutions in Yenagoa, Bayelsa State. Data were collected using a structured questionnaire, and the reliability of the instrument was confirmed with a Cronbach's alpha value of 0.83. Descriptive and inferential analyses were performed using Pearson Product-Moment Correlation with SPSS version 25. The results revealed a strong and statistically significant positive correlation between the use of digital hardware and software and the operational effectiveness of the institutions. The study concluded that workplace digitalisation significantly enhances workflow efficiency, decision-making, service delivery, and overall institutional performance. The findings emphasize the importance of continuous investment in digital technologies to maintain and improve operational effectiveness in private healthcare institutions.

Keywords:
Workplace Digitalisation, Operational Effectiveness, Hardware, Software

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1. INTRODUCTION

The 21st century has witnessed a dramatic shift in the structure and dynamics of workplace operations, primarily driven by the rapid digitalisation of organizational systems. Digitalisation, in its broadest context, refers to the integration of digital technologies into everyday business operations, transforming how organizations create value and deliver services (Brennen & Kreiss, 2016). This transformation goes beyond mere automation of tasks to encompass broader structural changes such as the reconfiguration of organizational processes, digital workflows, remote collaboration, and data-driven decision-making. The workplace, once confined to physical boundaries and manual procedures, has evolved into a more agile, technology-driven environment, enabling faster communication, seamless information sharing, and improved customer engagement (Schwab, 2017). As organizations navigate increasingly volatile markets and technological disruptions, digitalisation has emerged as a vital tool for enhancing operational effectiveness. Operational effectiveness refers to the ability of an organization to perform its internal processes efficiently and consistently to achieve desired results (Porter, 1996). In today's highly competitive and globalized economy, maintaining operational effectiveness requires a continuous improvement of workflows, reduction in process redundancies, optimization of resource utilization, and leveraging of real-time data to make informed decisions (Hammer, 2015). Thus, digitalisation not only reshapes organizational infrastructure but also serves as a catalyst for performance excellence and competitive advantage.

In recent years, the concept of "digital workplace" has gained traction in management discourse. A digital workplace is not merely a digitized version of the traditional office but a holistic environment where technology, people, and processes intersect to enable high-performance work (Gartner, 2020). It encompasses digital collaboration tools, flexible work arrangements, cloud services, virtual workspaces, and employee engagement platforms. The goal of a digital workplace is to enhance productivity, improve employee experience, and align technological innovation with business strategy. Organizations that have adopted digital workplace models report improved workflow automation, higher employee satisfaction, and faster innovation cycles (Microsoft, 2021). As businesses become more reliant on digital infrastructure, the importance of cybersecurity cannot be overstated. Cyber threats such as hacking, phishing, ransomware, and data breaches can significantly disrupt operations, compromise sensitive information, and damage organizational reputation (Akhgar et al., 2014). Therefore, digitalisation must be accompanied by robust cybersecurity frameworks, data governance policies, and continuous risk assessments to safeguard operational continuity. Moreover, compliance with national and international data protection regulations, such as the Nigerian Data Protection Regulation (NDPR) and the General Data Protection Regulation (GDPR), is essential in promoting trust and accountability in digital workplaces. Several empirical studies have examined the relationship between digitalisation and operational performance. For example, Parida et al. (2015) found that digital transformation enhances the flexibility and responsiveness of manufacturing firms, allowing them to customize products and services with greater efficiency. Similarly, Kane et al. (2015) emphasized that organizations that are digitally mature are better positioned to drive innovation, reduce operational delays, and enhance customer satisfaction. In the public sector, digitalisation has improved service delivery and transparency, making government agencies more responsive to citizens' needs (Mergel et al., 2019). These findings suggest that digital workplace initiatives can significantly influence how organizations adapt, function, and grow in dynamic business environments.

1.1 Problem statement

Despite the promising prospects of digitalisation, several challenges hinder its full integration into workplace operations. Resistance to change, lack of digital skills among employees, inadequate IT infrastructure, and cybersecurity risks are among the most commonly cited obstacles (Vial, 2019). Additionally, the cost of acquiring and maintaining digital tools can be prohibitive, especially for small and medium-sized enterprises (SMEs). Moreover, digitalisation can lead to workforce displacement, job redundancies, and ethical dilemmas related to data privacy and surveillance (Bessen, 2019). Therefore, for digitalisation to contribute meaningfully to operational effectiveness, it must be strategically aligned with organizational goals, employee capabilities, and customer expectations. In Nigeria and other developing economies, the adoption of workplace digitalisation remains uneven due to infrastructural limitations, inconsistent policies, and digital divide issues (Chukwuemeka et al., 2021). Many organizations, particularly in the public and informal sectors, still rely on traditional paper-based systems that are slow, inefficient, and prone to errors. However, sectors such as banking, telecommunications, and education have made significant strides in digital innovation. For instance, the adoption of e-banking services, mobile apps, and customer self-service portals has transformed the banking industry, improving transaction speeds, customer reach, and overall service delivery (Eze et al., 2019). In the education sector, online learning platforms, digital libraries,

and virtual classrooms have become essential tools in academic delivery, especially in the post-COVID era.

It is also important to consider the human dimension of workplace digitalisation. Employees are the key drivers of digital adoption, and their perception, attitudes, and digital competencies greatly influence the success of such initiatives (Brock & von Wangenheim, 2019). Organizations must invest in digital literacy programs, change management strategies, and supportive workplace cultures to foster employee engagement in digital transformation. Furthermore, leadership plays a pivotal role in promoting digital mindsets, communicating vision, and removing barriers to innovation. Studies have shown that transformational leaders who embrace digital change and promote inclusive innovation are more likely to steer their organizations toward operational excellence (Fitzgerald et al., 2014). Given the transformative impact of digitalisation on workplace structures and functions, it is imperative to examine how it influences operational effectiveness across different organizational contexts. While existing literature provides insights into the benefits and challenges of digitalisation, there remains a need for more empirical evidence on its operational implications, particularly in developing economies. This is especially relevant in Nigeria, where digital adoption is uneven, and many organizations are still transitioning from manual to digital systems. Understanding the nexus between workplace digitalisation and operational effectiveness will provide valuable insights for policymakers, business leaders, and academics in shaping future digital transformation strategies. In light of the foregoing, this study seeks to explore the impact of workplace digitalisation on operational effectiveness.

The primarily the study investigate the relationship between the workplace digitalisation and operational effectiveness in private healthcare institutions in Bayelsa State. The Specific objectives are to:

- Ascertain the relationship between hardware and operational effectiveness in private healthcare institutions in Bayelsa State.
- Examine the relationship between software and operational effectiveness in private healthcare institutions in Bayelsa State.

H01: There is no significant relationship between hardware and operational effectiveness in private healthcare institutions in Bayelsa State.

H02: There is no significant relationship between software and operational effectiveness in private healthcare institutions in Bayelsa State.

2. CONCEPTUAL REVIEW

2.1 Workplace Digitalisation

The process of workplace digitalisation entails integrating digital technology into all facets of corporate operations, which significantly alters how businesses function, interact, and deliver value. Advances in cloud computing, artificial intelligence (AI), big data analytics, and the Internet of Things (IoT) have fuelled this shift by enabling businesses to streamline processes, increase productivity, and make more informed choices (McKinsey, 2020). The adoption of digital tools has become a necessity rather than an option, as companies strive to remain competitive in an increasingly technology-driven economy. Digitalisation is not merely about replacing manual processes with digital ones; it involves a cultural shift that prioritises innovation, agility, and continuous learning (Kane et al., 2019). Automating repetitive jobs is a significant consequence of workplace digitisation. AI-driven software and robotic process automation (RPA) have made it possible to handle tasks like data input, invoice processing, and customer service with minimal human intervention (Daugherty & Wilson, 2018). Employees may focus on more complicated activities that require creativity and critical thinking, while operational costs are reduced as a result of fewer errors. (World Economic Forum, 2020) in a digital economy. By providing prompt replies, increasing customer happiness, and relieving the workload of human support employees, chatbots and virtual assistants, for example, have revolutionised customer service (Gartner, 2021). However, worries about possible job losses have been raised by the increasing use of automation, underscoring the significance of reskilling and upskilling employees to prepare them for changing roles in a digital economy (World Economic Forum, 2020).

Collaboration and communication have also been transformed by digitalisation. Cloud-based platforms such as Microsoft Teams, Slack, and Zoom facilitate real-time interaction among employees, regardless of geographical location (Deloitte, 2022). Remote and hybrid work models, which gained prominence during the COVID-19 pandemic, rely heavily on these tools to maintain productivity and team cohesion. Digital workspaces integrate project management software, file-sharing systems, and virtual meeting rooms, enabling seamless coordination across departments (Accenture, 2021). Despite these benefits, challenges such as digital fatigue and information overload have emerged, requiring organisations to establish clear guidelines on digital communication etiquette (Harvard Business Review, 2021). One important component of workplace digitisation is data-driven decision-making. Organisations may collect, evaluate, and understand vast amounts of data in real time with the use of sophisticated analytics technologies, revealing insights that inform strategic decisions (Davenport, 2018). Predictive analytics, for instance, helps companies to improve supply chain efficiency, foresee market trends, and customise client experiences. Businesses that employ data analytics are three times more likely than those that don't to realise significant improvements in their decision-making processes, per a PwC (2022) research. Strong governance mechanisms must be put in place for responsible data usage since, despite these advantages, an increasing reliance on data also brings up significant ethical concerns about privacy, security, and possible algorithmic bias (European Commission, 2021).

The digitalisation of human resources (HR) has also revolutionised talent management. AI-driven recruitment platforms can screen resumes, conduct initial interviews, and assess candidate suitability based on predefined criteria (Bersin, 2020). This speeds up the hiring process and reduces unconscious bias, promoting diversity and inclusion. Learning management systems (LMS) enable employees to access training modules on-demand, fostering continuous professional development (LinkedIn Learning, 2021). Performance management tools track employee engagement and productivity, providing managers with actionable insights to enhance workplace satisfaction (Gallup, 2022). Nevertheless, the digitisation of HR processes must balance efficiency with empathy, ensuring that technology complements rather than replaces human judgment (SHRM, 2021). The increasing digitisation of businesses has made cybersecurity a top responsibility. Organisations have been forced to invest heavily in security systems due to the rise in cyberthreats, including ransomware, phishing schemes, and data breaches (Kaspersky, 2022). To secure sensitive data, multi-factor authentication (MFA), encryption technologies, and zero-trust security frameworks are currently considered standard precautions (NIST, 2021). Furthermore, as human error remains the main source of security breaches, it is imperative that employees receive cybersecurity education (Verizon, 2023). The significance of implementing strong data protection procedures is further highlighted by adherence to laws such as the General Data Protection Regulation (GDPR) (ICO, 2022).

The environmental impact of digitalisation is a double-edged sword. On one hand, paperless offices and remote work reduce carbon footprints by minimising travel and resource consumption (IPCC, 2021). On the other hand, the energy demands of data centres and electronic waste from obsolete devices pose sustainability challenges (UNEP, 2022). Companies must adopt green IT strategies, such as energy-efficient hardware and responsible e-waste disposal, to mitigate these effects (Accenture, 2023). The modern company environment is changing due to workplace digitalisation, which offers unparalleled chances for improved productivity, creativity, and expansion. However, in order to properly execute it, companies need to establish a complete plan that takes ethical, cultural, and technical factors into account. Realising the full potential of digital transformation requires fostering sustainable practices, bolstering cybersecurity, and ensuring workforce flexibility. Businesses that maintain people at the core of their plans and adjust to the ongoing advancements in digital tools and systems will be the most successful in the digital age (Deloitte, 2023).

2.2 Hardware and Software

Any computer system must include both hardware and software as they work together to perform and manage computing tasks. The physical components of a computer, including input and output devices, the CPU, memory, storage units, and other peripherals, are referred to as hardware. On the other hand, software consists of the operating systems and applications that instruct the hardware on how to carry out particular functions. Together, these two elements influence system performance and the user experience in general, making them essential to the operation of modern computer systems (Stallings, 2017). The interdependence between hardware and software is crucial, as software cannot function without the underlying hardware infrastructure, and hardware alone is of little use without software to control it. This synergy enables users to interact with digital devices through user interfaces, applications, and operating systems. The efficiency of computing devices is often determined by how well the software and hardware are optimized to work with each other (Hamacher et al., 2012). For example, the speed of a processor directly influences how fast a software application runs, while well-designed software can reduce the load on hardware by optimizing system resources.

The central processing unit (CPU), also known as the computer's brain, is one of the most important parts of hardware systems. It is responsible for executing software instructions and controlling the flow of

data across the system. RAM (Random Access Memory) and other memory components support the CPU by acting as temporary storage for frequently requested information and commands. Devices like solid-state drives and hard drives are used to store user data and software for extended periods of time. Keyboards, mouse, and scanners are examples of input devices that allow users to interact with the system, while displays and printers are examples of output devices that show the user the information that has been processed (Mano & Ciletti, 2013).

Software, broadly classified as system software and application software, is necessary for managing hardware and facilitating user tasks. System software, such as operating systems like Windows, Linux, and macOS, controls hardware resources and serves as a foundation for the execution of application programs. Application software consists of tools designed for particular uses, like text editing, web browsing, and gaming, and these applications rely on system software to work because the operating system allows the software and hardware to communicate (Silberschatz et al., 2018). Programming languages and development environments that accommodate different degrees of abstraction and complexity are what propel software development. Developers may construct programs using high-level programming languages like Python, Java, and C++ without having to handle the finer points of hardware operations, which increases productivity and reduces mistakes. Compilers and interpreters transform these programs into machine-readable code. Furthermore, advancements like cloud computing, artificial intelligence, and mobile technologies have influenced contemporary software development techniques, resulting in more complex and demanding applications (Tanenbaum & Bos, 2015).

Technological advancements in hardware have significantly influenced the evolution of software. The introduction of multi-core processors, for instance, has led to the development of parallel computing software capable of utilizing multiple cores simultaneously for improved performance. Similarly, improvements in graphics processing units (GPUs) have enabled the growth of sophisticated visual applications in gaming, simulations, and scientific research. As hardware continues to advance in terms of speed, storage capacity, and energy efficiency, software must also adapt to leverage these improvements effectively (Bryant & O'Hallaron, 2015). Despite their synergy, hardware and software also present challenges. Hardware obsolescence, where older hardware is unable to support newer software versions, leads to compatibility issues and can result in increased costs for upgrades. Software bugs, security vulnerabilities, and inefficiencies can compromise system performance and data integrity, regardless of the hardware's capabilities. As a result, continuous maintenance, updates, and alignment between software and hardware specifications are necessary to ensure optimal performance and security (Pressman & Maxim, 2020). Hardware and software are interrelated components that form the backbone of computing technology. Hardware provides the essential structure and capability for performing tasks, while software enables users to interact with and control hardware functions. Their interdependence ensures that computers and other digital devices function efficiently and reliably. As technology continues to evolve, the integration between hardware and software will remain central to innovation in computing systems and the expansion of digital capabilities across industries and daily life.

2.3 Operational Effectiveness

Operational effectiveness refers to the ability of an organization to perform its core activities better than its rivals, with a focus on efficiency, quality, and speed. It involves optimizing processes, reducing waste, improving productivity, and maximizing the use of resources to deliver superior results. This concept is critical in both the public and private sectors, as it enables organizations to meet their strategic objectives while maintaining a competitive edge. According to Porter (1996), operational effectiveness is about performing similar activities better than rivals perform them. This means that companies must continually seek improvements in processes such as production, customer service, logistics, and supply chain management. While operational effectiveness is necessary for organizational success, it is not sufficient for long-term competitive advantage. This is because best practices in operations can be easily copied by competitors. However, its importance lies in the fact that it allows a firm to achieve excellence in executing its day-to-day tasks, which is essential for maintaining high performance standards (Hammer, 2001). Operational effectiveness can be measured through metrics such as cost reduction, cycle time, customer satisfaction, and employee productivity. By constantly enhancing these metrics, organizations can achieve higher profitability and better customer loyalty.

Technological innovation plays a significant role in improving operational effectiveness. The use of information and communication technologies has enabled organizations to automate processes, enhance data accuracy, and improve service delivery. For example, enterprise resource planning (ERP) systems integrate various business functions and provide real-time information, which facilitates better decision-making and coordination (Davenport, 1998). Similarly, lean management and Six Sigma methodologies have become popular approaches for eliminating inefficiencies and improving quality. These methodologies emphasize the continuous identification and removal of non-value-adding activities, which leads to more streamlined operations and better resource utilization.

Human resources also play a vital role in achieving operational effectiveness. Employees need to be well-trained, motivated, and aligned with organizational goals. Creating a culture of continuous improvement and innovation can empower employees to contribute ideas and solutions that enhance operational performance. Moreover, strong leadership is essential to drive operational excellence, as leaders set the vision, allocate resources, and monitor progress toward operational goals (Kotter, 1995). Although operational effectiveness focuses on internal processes, it also affects external performance. Customers tend to prefer organizations that consistently deliver high-quality products or services in a timely and cost-effective manner. This can lead to greater market share and brand loyalty. In highly competitive environments, operational effectiveness can be the difference between survival and failure. For instance, during periods of economic downturn, firms with more efficient operations are better positioned to cut costs and maintain profitability without compromising customer satisfaction (Hayes & Pisano, 1994).

2.4 Resource-Based Theory (RBT)

According to the Resource-Based Theory (RBT), firms may get and maintain a competitive advantage by employing resources that are uncommon, valued, distinctive, and challenging to replicate (Barney, 1991). RBT is a helpful framework for comprehending how digital assets and competences might improve organisational success when it comes to workplace digitalisation. Workplace digitisation is the process of integrating digital technology, such as cloud computing, artificial intelligence, and data analytics, into routine processes to increase productivity, creativity, and strategic decision-making. RBT states that only when the technologies satisfy the VRIN requirements—that is, they must be rare, valuable, difficult to replicate, and difficult to replace—does digital transformation provide competitive advantages (Barney, 1991). However, simply adopting digital tools is not enough; organizations must also build supporting capabilities such as digital skills and a flexible corporate culture to fully leverage these technologies (Wade & Hulland, 2004). RBT's fundamental tenet is that resources are unequally distributed, which means that businesses with better digital assets typically do better than others (Peteraf, 1993). Strong barriers to competition can be created, for instance, by proprietary algorithms or specially designed software systems that are exclusive and difficult for rivals to imitate. However, in order to stay competitive, businesses must constantly upgrade and invest in their systems due to the rapid evolution of digital technology (Teece, 2007). Staying ahead in a rapidly evolving digital world requires developing dynamic skills, which are characterised as the capacity to integrate, adapt, and refresh resources (Teece, 2007). This backs up the RBT theory, which holds that in order for an organisation to maintain a competitive edge, its resource base must change over time.

Additionally, RBT highlights how crucial human capital is to the digital transformation process. Workers with the know-how to utilise digital technologies well are a valuable, intangible resource that is hard for competitors to imitate and is socially rooted (Barney, 1991). The integration of digital tools and human skills is further strengthened by initiatives like knowledge-sharing and training, which aid businesses in staying competitive. However, their distinctiveness and strategic importance diminish when digital instruments like standardised software proliferate (Kraaijenbrink et al., 2010). In order to maintain their distinctiveness, organisations must strive for unique mixes of human and technology resources. RBT also emphasises the importance of human capital in the process of digital transformation. Employees with the skills to effectively use digital technologies are a socially embedded, intangible asset that is difficult for rivals to copy (Barney, 1991). Initiatives like knowledge-sharing and training, which help organisations remain competitive, further reinforce the convergence of digital technologies and human abilities. However, when digital tools like standardised software become more widely used, their uniqueness and strategic significance decline (Kraaijenbrink et al., 2010). Organisations must aim for unusual combinations of technology and human resources in order to remain unique.

3. METHODOLOGY

Descriptive survey research design was adopted to explore opinion of managerial staff of the studied private healthcare institutions in Bayelsa State. The study population is made up of forty-eight (48) managerial level employees from selected private hospitals operating in Yenagoa, Bayelsa

State. Simple random sampling technique was adopted to choose the study participants. The use of questionnaire was adopted as the primary source of data collection. Which is structured on a five-point Likert scale ranging from 1 = Strongly Disagree to 5 = Strongly Agree. Cronbach's alpha with a reliability value of 0.8 (0.83) was proven to ensure the reliability of the instrument. The data collected was coded before computed for descriptive analysis and finally inferential analysis was achieved using Pearson Product-Moment Correlation with the Statistical Application for Social Sciences (SPSS) version 25.

4. ANALYSIS AND RESULTS

Table 1: Correlation result on hardware and operational effectiveness in private healthcare institutions in Bayelsa State

		Hardware	Operational effectiveness
Hardware	Pearson Correlation	1	.488**
	Sig. (2-tailed)		0
	N	48	48
Operational effectiveness	Pearson Correlation	.488**	1
	Sig. (2-tailed)	0	
	N	48	48

**. *Correlation is significant at the 0.01 level (2-tailed).*

Source: SPSS Version 23 Output of Survey Data, 2025.

The correlation result in Table 1 reveals a statistically significant positive relationship between hardware and operational effectiveness in private healthcare institutions in Bayelsa State. Specifically, the Pearson correlation coefficient ($r = 0.488$, $p < 0.01$) indicates a moderate positive correlation. This suggests that as the availability or quality of hardware increases, there is a corresponding improvement in operational effectiveness within these healthcare institutions. The significance level ($p = 0.000$) being less than 0.01 confirms that the relationship is not due to chance, thereby supporting the validity of the association observed. These findings imply that hardware components such as medical devices, diagnostic equipment, and IT infrastructure play a crucial role in enhancing the efficiency and performance of healthcare operations (Ajayi & Ojo, 2020; Obasola & Mabawonku, 2018). In line with previous studies, this result emphasizes the importance of technological investments in healthcare. For instance, Akinyele and Oloruntoba (2019) found that access to reliable hardware infrastructure significantly improved service delivery and patient outcomes in private clinics. Similarly, Okon and Ekanem (2021) argued that operational effectiveness in health institutions is largely dependent on the robustness of the hardware systems deployed.

Table 2: Correlation result on software and operational effectiveness in private healthcare institutions in Bayelsa State

		Software	Operational effectiveness
Software	Pearson Correlation	1	.678**
	Sig. (2-tailed)		0
	N	48	48
Operational effectiveness	Pearson Correlation	.678**	1
	Sig. (2-tailed)	0	
	N	48	48

**. *Correlation is significant at the 0.01 level (2-tailed).*

Source: SPSS Version 23 Output of Survey Data, 2025.

The correlation result presented in Table 2 indicates a statistically significant positive relationship between software and operational effectiveness in private healthcare institutions in Bayelsa State. The Pearson correlation coefficient ($r = 0.678$, $p < 0.01$) reflects a moderate to strong positive correlation, suggesting that improvements in software applications—such as hospital management systems, electronic medical records, and diagnostic software—are associated with enhanced operational effectiveness. This result implies that as healthcare institutions adopt and effectively utilize software solutions, there tends to be a notable improvement in their operational efficiency, service delivery, and decision-making processes. The significance level ($p = 0.000$) confirms that the correlation is highly significant and unlikely to have occurred by chance. These findings are consistent with prior studies that emphasized the role of software in driving healthcare performance. For example, Nwankwo and Orji (2020) found that software systems improved coordination and reduced medical errors in private clinics. Similarly, Adebayo and Fashola (2021) reported that health information systems led to quicker diagnostics and enhanced patient satisfaction in Nigerian hospitals.

5. CONCLUSION

This research explored the connection between the digitalisation of the workplace and the operational effectiveness of private healthcare facilities in Bayelsa State. Through inferential statistical analysis, the study identified a strong and statistically significant positive correlation between the use of both digital hardware (such as computers, servers, and medical devices) and software (including hospital management systems and electronic health records) with the overall effectiveness of operations. The results indicate that integrating modern digital tools significantly improves workflow efficiency, decision-making, and service delivery within these institutions. The evidence supports the notion that technological advancements not only streamline administrative and clinical processes but also contribute to better patient care and institutional performance. In summary, the study confirms that workplace digitalisation has a meaningful and beneficial impact on the operational success of private healthcare institutions in Bayelsa State.

5.1 Recommendations

Based on the result of inferential analysis, the following:

Private healthcare institutions in Bayelsa State should prioritize regular investments in both hardware and software technologies to sustain and improve operational effectiveness. Continuous training programs should be implemented to equip healthcare personnel with the skills necessary to efficiently utilize digital tools and systems. Policymakers should encourage partnerships between the government and private healthcare providers to facilitate access to affordable digital solutions and infrastructure. Institutions should regularly assess the effectiveness of their digital systems to ensure they align with operational goals and enhance service delivery. Healthcare management should incorporate digital transformation as a core component of institutional policies and strategic plans to drive sustainable development.

5.2 Contribution to Knowledge

This study provides empirical evidence that digitalization specifically the adoption of both hardware and software technologies significantly enhances operational effectiveness in private healthcare institutions. It contributes to the growing body of knowledge by establishing a clear and positive link between workplace digitalisation and performance in the context of healthcare delivery in Bayelsa State, Nigeria.

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