

WORKFLOW MANAGEMENT SYSTEM AND ADMINISTRATIVE EFFICIENCY INDEX OF DEPOSIT MONEY BANKS IN PORT HARCOURT, RIVERS STATE, NIGERIA

Patience Nuka GWARAH ¹ & Nelly Ernest OSUAMKPE ²

Department of Office Technology Management, Kenule Beeson Saro-Wiwa Polytechnic, Bori,
Rivers State, Nigeria

¹Gsm: 0803 705 8784, & ²GSM: 08064246280

ABSTRACT

The purpose of this study was to examine the relationship between workflow management system and administrative efficiency of deposit money banks in Port Harcourt, Rivers State, Nigeria. The study adopted the quasi-experimental research design and taking cognizance of the cross-sectional approach as the study seeks to investigate the correlations between the study variables. The study population comprises of ninety (90) management staff derive from 18 deposit money banks in Port Harcourt, Rivers State. The entire population was studied using census as sampling technique which form the study sample size. Data collection was gathered through structured closed ended questionnaire and analysed using the Pearson Product Moment Correlation Coefficient Statistics and presented with the aid of SPSS version 21.0 for interpretations. The results of analysed data showed that workflow management system significantly correlated positively with the measures of administrative efficiency being cost reduction and profitability of deposit money banks in Port Harcourt, Rivers State, Nigeria. Relying on the empirical findings, the study concluded that workflow management system has positive significant relationship with administrative efficiency. We therefore recommended that workflow management system should be used as it enhances administrative efficiency measures of cost reduction and profitability.

Keywords: Workflow Management System, Administrative Efficiency, Cost Reduction, Profitability

JEL Classification: M15, G21, M54

1. INTRODUCTION

Workflow management system is concerned with providing automated support for business processes. Typically, a workflow management system involves both people and software applications. Work is assigned to participants based on explicit resource allocation directives, which may link into an organizational database, and the timing is driven by an explicit representation of the temporal order of the various activities of the business process. It is business information technology field that deals with controlling flows of work in complex organizations. According to Georgakopoulos and Hornick (2005) it can be seen as 'administrative logistics' that is, getting the right information at the right time to the right persons. In doing so, it primarily deals with the structure of work processes, not with the contents of these processes. Furthermore, one of the modern yardsticks used for rating a modern business enterprise is its information communication technology (ICT) infrastructural layout. This is an indication of the importance of ICT for business establishments (Luka & Frank 2012).

The banking sector in particular adopted information and communication technology to improve the efficiency and effectiveness of services offered to customers, improve business processes, as well as to enhance managerial decision making and workgroup collaborations. This helps strengthen their competitive positions in rapidly changing economics. Thus, the administrative efficiency of any enterprise is tied to retaining loyal customers, improving productivity, cutting costs, increasing market share, and providing timely organizational response. Information communication technology (ICT) is a major enabler for dealing with these issues. Because the pace of change and the degree of uncertainty in today's competitive environment are accelerating geometrically (Oyinkola, 2018). Despite the rapid growing adoption of the information technology tools to improve banking operations through the use of SMS, internet banking, online banking, mobile banking and real time gross settlement, Nigerian banks are still facing a lot of challenges in their operations so as to increase their productivity, enhance quality of service delivery and also minimize the average operating cost and time (Binugo & Aregbeshola, 2014). And one such issue that face the banking sector today despite the adoption of information communication technology in their operation is administrative efficiency. Efficiency involves using minimal resources to achieve maximum result. Its main target is to reduce operational cost. In this case, administrative efficiency is a concern that leaders of organization must pay attention to as it's defined the existence and failure of organization. Administration has become an integral part of doing business in any industry as it is regarded as the heartbeat of the organization.

As organizations work through these changes, business leaders are starting to recognize that organizational technology plays a fundamental part in the shift toward administrative

efficiency. Administrative efficiency refers to the ability of an organization to utilize its resources, processes, and systems in an optimal manner to achieve its goals and objectives (Rainey, 2009). It encompasses various aspects, including operational efficiency, resource allocation, decision-making processes, and the effective coordination of administrative functions (Mok, 2013). One of the primary drivers of administrative efficiency is the adoption of modern management practices and technologies (Bryson et al., 2014). The use of information and communication technologies (ICT), such as enterprise resource planning (ERP) systems, workflow automation, and digital collaboration tools, can streamline administrative processes, reduce redundancies, and improve data accessibility and decision-making (Laudon & Laudon, 2021). Therefore, this study intent to examine the relationship between workflow management system and administrative efficiency of deposit money banks in Rivers State, Nigeria.

Research Questions

1. How does workflow management system influence cost reduction of deposit money banks in Port Harcourt, Rivers State, Nigeria?
2. How does workflow management system influence profitability of deposit money banks in Port Harcourt, Rivers State, Nigeria?

Research Hypotheses

- H₀₁: There is no significant relationship between workflow management system and cost reduction of deposit money banks in Port Harcourt, Rivers State, Nigeria.
- H₀₂: There is no significant relationship between workflow management system and profitability of deposit money banks in Port Harcourt, Rivers State, Nigeria.

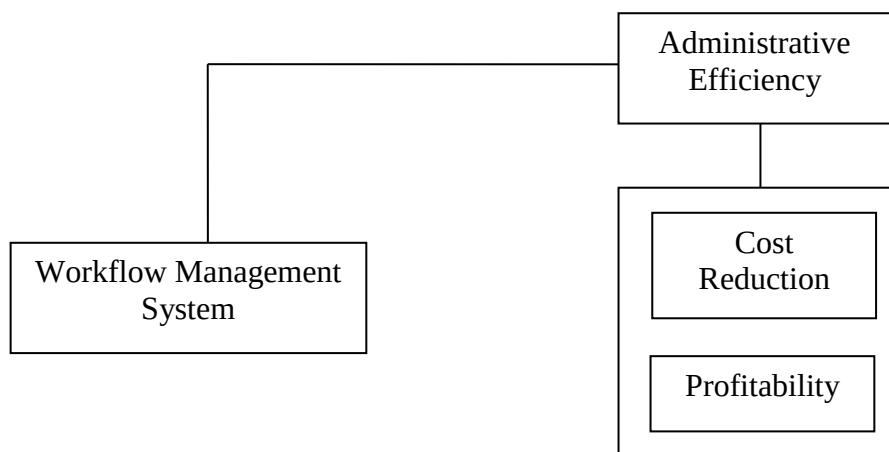


Figure 1: Conceptual framework for workflow management system and administrative efficiency

2. REVIEW OF RELATED LITERATURE

Workflow Management System

Workflow management system is concerned with providing automated support for business processes. Typically, a workflow management system involves both people and software applications. Work is assigned to participants based on explicit resource allocation directives, which may link into an organizational database, and the timing is driven by an explicit representation of the temporal order of the various activities of the business process. It is business information technology field that deals with controlling flows of work in complex organizations. According to Georgakopoulos and Hornick, (2005) it can be seen as 'administrative logistics' that is, getting the right information at the right time to the right persons. In doing so, it primarily deals with the structure of work processes, not with the contents of these processes.

Workflow management in its most complete form includes a broad spectrum of aspects. The most important of these aspects are: routing of work objects (e.g. documents) through an organization as described by detailed route specifications. This includes the selection of alternative paths on 'splits', allocation of tasks in the workflow to actors (organization workers) in the organization. The allocation can be based on actor functions, roles, workload, and authorizations. Scheduling of tasks to be performed in time, dealing with workload of actors, prioritization of tasks, and availability of required resources. Scheduling includes alerting actors when tasks are to be performed. Scheduling of scarce resources like meeting rooms specialized equipment, based on resource availability usage per task, and task priorities. Monitoring the flow of work for management and alerting when attention is needed. Handling exceptional situations like missed deadlines or missing actors using exception definitions and general business rules. It may be clear that this long list of aspects causes a workflow management system dealing with all of this to be very complex.

Consequently, not all the aspects are completely covered by typical existing workflow management systems. A large deal of research and development effort is being devoted to extending existing systems to include more of the above aspects (Grefen et al., 1995). Workflow management is most suitable in modern organizations that have well-structured, well-described, stable, and highly repetitive business processes. In Mintzberg's taxonomy, this coincides in general with the machine bureaucracy type of organization. The simple structure is usually small to benefit from advanced workflow management technology. End users in a workflow environment use a workflow client module to access their tasks. This module presents a task list to the user, which depicts the tasks to be performed with relevant attributes, like priority, status of execution, and input and output documents.

From the task list, a user can open a specific task, inspect its attributes, and access relevant information (like forms and documents). Two modes of task assignment can generally be distinguished: Push mode: the workflow engine places (pushes) a specific task in the task list of a specific user; users have no influence on the tasks they have to perform. Pull mode: the workflow engine places specific tasks in the task list of a group of users; specific users select (pull) the tasks they want to perform. Clearly, the pull model allows more flexibility to the users, whereas the push model allows for stricter control of activities. The choice between the two modes depends on organization structure and culture mixed forms are also possible, in which specific classes of tasks are handled in push mode and other classes of tasks in pull mode. This client module is based on Java technology, such that it can be accessed through a regular web browser. This clearly facilitates standard intranet technology as the underlying infrastructure for workflow management (Nwinyokpugi, 2015).

Workflow management systems are a class of software that supports business processes by taking on their information logistics, i.e., they ensure that the right information reaches the right person at the right time, (van der Aalst & van Hee 2002). Apart from the obvious fact that there is potential for savings in terms of time and money, there are other benefits in deploying workflow applications. By having explicit representations of these resource and control-flow dependencies, it can be claimed that changing workflows is easier and hence a business that has automated its processes by means of a workflow management system may be more responsive to changes in its environment, such as changing legislation or evolving market conditions.

Administrative Efficiency: Administrative efficiency refers to the ability of an organization to utilize its resources, processes, and systems in an optimal manner to achieve its goals and objectives (Rainey, 2009). It encompasses various aspects, including operational efficiency, resource allocation, decision-making processes, and the effective coordination of administrative functions (Mok, 2013). One of the primary drivers of administrative efficiency is the adoption of modern management practices and technologies (Bryson et al., 2014). The use of information and communication technologies (ICT), such as enterprise resource planning (ERP) systems, workflow automation, and digital collaboration tools, can streamline administrative processes, reduce redundancies, and improve data accessibility and decision-making (Laudon & Laudon, 2021).

However, the successful implementation of these technologies requires a well-designed change management strategy, employee training, and a culture that embraces innovation and continuous improvement (Bryson et al., 2014; Mok, 2013). Administrative efficiency is also influenced by organizational structure and governance mechanisms (Rainey, 2009). Flat and

decentralized structures, with clear lines of authority and accountability, can facilitate efficient decision-making and communication, while hierarchical and bureaucratic structures may hinder agility and responsiveness (Mok, 2013). Furthermore, effective leadership and human resource management practices play a crucial role in fostering administrative efficiency (Bryson et al., 2014). Leaders who prioritize efficiency, set clear goals, and empower employees can drive organizational performance and productivity (Rainey, 2009). Additionally, talent management, performance evaluation, and employee development programs can contribute to building a skilled and motivated workforce, enhancing administrative efficiency (Mok, 2013).

Administrative efficiency has been linked to various organizational outcomes, including cost savings, improved service delivery, and enhanced competitiveness (Rainey, 2009; Bryson et al., 2014). Efficient organizations can allocate resources more effectively, respond to market changes more rapidly, and provide higher-quality services or products to their customers (Mok Kim, 2013). It is important to strike a balance between administrative efficiency and other organizational goals, such as innovation, employee well-being, and ethical considerations (Rainey, 2009). Excessive focus on efficiency may lead to short-term thinking, employee burnout, or compromising long-term sustainability and organizational values (Mok, 2013).

Cost Reduction: Cost reduction efforts from an administrative perspective have garnered significant attention as organizations seek to streamline their operations and improve efficiency. This approach focuses on optimizing administrative processes, reducing bureaucracy, and leveraging technology to achieve cost savings. Also, one key area of focus is the adoption of digital technologies and automation to enhance administrative efficiency. Brynjolfsson and McAfee (2014) highlighted the potential of digital technologies, such as workflow automation, document management systems, and robotic process automation (RPA), to reduce administrative costs by minimizing manual tasks, improving data accuracy, and increasing productivity. However, they emphasized the need for effective change management and employee reskilling to maximize the benefits of these technologies.

Another strategy for administrative cost reduction is the optimization of organizational structures and processes. Rainey (2009) discussed the importance of simplifying bureaucratic procedures, reducing redundancies, and improving communication and coordination between administrative units. This approach can lead to cost savings by eliminating unnecessary complexity, improving decision-making efficiency, and minimizing duplication of efforts. Outsourcing and shared services have also been explored as means to reduce administrative costs. Janssen and Joha (2006) examined the adoption of shared service centers, where administrative functions such as human resources, finance, and IT are consolidated and

centralized. This approach can yield significant cost savings through economies of scale, process standardization, and resource pooling. Similarly, Kakabadse and Kakabadse (2002) analyzed the benefits and risks of outsourcing administrative functions to external providers, highlighting the potential for cost savings but also emphasizing the need for effective vendor management and risk mitigation strategies.

Effective human resource management practices have also been linked to administrative cost reduction efforts. Boxall and Purcell (2011) discussed the importance of strategic workforce planning, talent management, and performance management systems in optimizing the allocation and utilization of human resources, thereby reducing administrative costs associated with inefficiencies and underutilization of personnel. However, it is essential to strike a balance between cost reduction and maintaining the quality of administrative services. Keeffe and Torrance (2009) cautioned against excessive cost-cutting measures that may undermine administrative capabilities, leading to decreased service quality, employee dissatisfaction, and potential legal or regulatory compliance issues.

Profitability: Profitability is very important for a business or company to ensure that a company can survive. According to economic theory, the profit is derived from the total revenue minus total cost. Profit is also known as the net amount of fixed costs and variable costs which derived from sales in which he is known as the excess of revenue after deducting the expenses and costs. According to Borhan et al. (2006), profit can be defined as revenue or proceeds from an activity, such as companies, businesses and others in excess of capital and all other related expenses. It is the driving force of the business, as well as the survival indicator of a firm. The accomplishment of its goal is entirely dependent on its profitability. The profitability is the main index of a business performance. Retailing businesses are a specific type of firms and therefore, the rate of profit is very important to its performance.

Profit is a financial benefit that is realized when the amount of revenue gained from a business activity exceeds the expenses, costs, and taxes needed to sustain the activity. Any profit that is gained goes to the business's owners, who may or may not decide to spend it on the business. Profit is the money a business makes after accounting for all expenses. Regardless of whether the business is a couple of kids running a lemonade stand or a publicly traded multinational company, consistently earning profit is every company's goal. As a result, most business performance is measured base on profitability in its various forms. Some analysts are interested in top-line profitability, whereas others are interested in profitability before expenses, such as taxes and interest, and still others are only concerned with profitability after all expenses have been paid.

According to Gibson (2005) profitability of a firm is defined as "the ability of firms to generate earnings". Brigham et al. (1999) consider that "profitability is the net result of various policies and managerial decisions, and the profitability rates represent the net operating result of the combined effects of liquidity, asset management and debt management. In the idea of Greuning (2005) making some interpretation about international financial reporting standards (IFRS), considers that the profitability indicators generally mean "an indication of how a company's profit margins are associated with sales, average capital and own average capital. Colasse (2009) appreciates that, the enterprise's profitability represents its aptitude to get a result in consequence of its business; it is often expressed with the help of the ratio between this result and sales (or production).

Stefea and Nica (2012) appreciates that the profitability is the ability of a lucrative activity to generate revenues higher than expenses involved. The profitability indicators are well known as profitability ratio or accumulation margin. Buglea (2004), referring to an entity's profitability rates, estimates that they "are known as margin rates and they are built as a ratio between the results of the profit's nature and revenues or expenses. Duran et al. (2005) consider that firm-level of profitability's analysis aims two essential objectives: to determine the level of profitability and setting margins of profitability.

3. METHODOLOGY

The study adopted the quasi-experimental research design and taking cognizance of the cross-sectional approach. This approach is relevant where a study focuses on population that shares homogenous characteristics. Now, because of the nature of the study population a cross-sectional research approach becomes very necessary to allow for a scientific generalisation of result. The population of the study comprises of (18) deposit money banks in Rivers State, Nigeria. The sample size was selected from the population members of top, middle and lower management staff (one top management, two middle management and two lower management staff). The sample size was therefore ninety (90) managerial staff from the various deposit money banks in Rivers State. The questionnaire was distributed to the respondents based on the study sample size of which 80 copies was retrieved and used for the study analysis. Descriptive statistics were also applied on a 4-point Likert Scale. The hypotheses were tested using Pearson Product Moment Correlation Coefficient statistics and result presented through the Statistical package for social science (SPSS) version 21.0 to find the relationship between workflow management system and administrative efficiency of deposit money banks in Port Harcourt, Rivers State, Nigeria.

4. DATA ANALYSIS AND DISCUSSION OF FINDINGS

Table 1: Descriptive Statistics of Workflow Management System (WMS)

Items	N	Mean	Std. Deviation
How effective the programme is able to perform tasks and enforce rules which were previously implemented by humans?	80	3.37	.891
To what extent does the information process rooted in the organizational structure and/or existing environment of the information system?	80	3.54	.826
How effective is the system able to perform iterative tasks without error and provide mutual feedback?	80	3.65	.695
To what extent does the workflow management system support the reengineering process?	80	3.45	.794
Valid N (listwise)	80		

Source: Research survey, 2023

Table 1 showed that workflow management is effective in deposit money banks in Rivers State, Nigeria. Question one showed how effective the programme is able to perform tasks and enforce rules which were previously implemented with a mean of 3.37, question two asked to what extent does the information process rooted in the organizational structure and or existing environment of the information which scored a mean value of 3.54, while question three is on how effective is the system able to perform iterative tasks without errors and provide mutual feedback, this in indicated with a mean of 3.65 and lastly question four asked to what extent does the workflow management support the reengineering process with a mean value of 3.45. All the mean calculated were all above the criterion mean of 2.50 for a 4-point Likert scale. This showed that workflow is effective in deposit money banks in Rivers State, Nigeria.

Table 2: Descriptive Statistics of Organizational Cost Reduction

	N	Mean	Std. Deviation
To what extent does the organization gain the necessary economy of large scale production?	80	3.44	.760
To what extent does your organization experience cost reduction as a result of the expansion?	80	3.68	.652
To what extent does the organization product cover a large market?	80	3.45	.855
To what extent does the cost reduction matched with companies specific marketplace?	80	3.19	.843
Valid N (listwise)	80		

Source: Research survey, 2023.

Table 2 showed cost reduction in deposit money bank in Rivers State, Nigeria. Question one asked to what extent does the organization reduced cost and still maintain large scale production with quality scored a mean of 3.44, question two is on to what extent does your organization experience cost reduction as a result of expansion scored a mean 3.68, question three asked to what extent does the organization product covered a large market scored 3.45, and question four to what extent does the expansion matched with companies' specific marketplace scored 3.19.

Table 3: Descriptive Statistics of Organizational Profitability

	N	Mean	Std. Deviation
Workflow management system increases customers satisfaction thereby increases organizational profitability	80	3.42	.925
Facilitates production cycle thereby increases profitability.	80	3.44	.760
To what extent does workflow management system increases transaction between customers and organizations	80	3.68	.652
To what extent is the liquidity of your organization available for future investment	80	3.45	.855
Valid N (listwise)	80		

Source: Research survey, 2023.

Table 3 showed the level of respondents' response on profitability of the deposit money banks in Rivers State, Nigeria. Question one showed that workflow management system increases customers satisfaction thereby increases organizational profitability 3.42, question two showed that workflow management system facilitates product cycle thereby increases profitability with a mean of 3.44, question three asked to what extent workflow management increases transaction between customers and organization scored a mean of 3.68, and lastly question four asked to what extent is the liquidity of your organizational available for future investment scored 3.45. Therefore, the table showed that workflow management system increases profitability of the organization.

Hypotheses Testing

The relationship between workflow management system and administrative efficiency was tested using Pearson Product Moment Correlation Coefficient.

Table 4: Relationship between workflow management system and organizational cost reduction

		Workflow Management System	Cost reduction
Workflow Management System	Correlation Coefficient	1.000	.980**
	Sig. (2-tailed)	.	.000
	N	80	80
Cost reduction	Correlation Coefficient	.980**	1.000
	Sig. (2-tailed)	.000	.
	N	80	80

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

Source: Research survey, 2023

The table 4 showed the correlation of hypotheses one; the hypothesis one show a significant correlation at $r = .980^{**}$ where $P\text{-value} = .000$ ($P < 0.005$). This implies a strong and significant relationship between both variables at 95% level of confidence. We therefore reject the null hypothesis (H_{01}), and upheld the alternate and restated thus; there is a significance relationship between workflow management system and organizational cost reduction in deposit money banks, Port Harcourt, Rivers State, Nigeria.

Table 5: Relationship between workflow management system and organizational Profitability

		Workflow Management System	Profitability
Workflow Management System	Correlation Coefficient	1.000	.959**
	Sig. (2-tailed)	.	.000
	N	80	80
Profitability	Correlation Coefficient	.959**	1.000
	Sig. (2-tailed)	.000	.
	N	80	80

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

Source: Research survey, 2023

Table 5 showed the correlation of hypotheses two; the hypothesis two show a significant correlation at $r = .959^{**}$ where $P\text{-value} = .000$ ($P < 0.005$). This implies a strong and significant relationship between both variables at 95% level of confidence. We therefore reject the null hypothesis (H_{01}), and upheld the alternate and restated thus; there is a significance relationship between workflow management system and organizational profitability in Port Harcourt, Rivers State, Nigeria.

Discussion of Findings

The study adopted the inferential statistics in the analysis of the study data in which all the questions on the questionnaire item returned agreed mean greater than 2.50 for a 4 Points Likert Scale. The hypotheses of the study were tested using the Pearson Product Moment Correlation Coefficient and results presented through the Statistical Package for Social Sciences (SPSS) for easy interpretation. The hypothesis 1 showed that workflow management system and organizational cost reduction has positive significant correlation at $r = .980^{**}$ and $p\text{-value}$ at $0.000 < 0.05$. This is an indication that there is a strong relationship between workflow management system and organizational cost reduction at 95% level of confidence. Thus, workflow management system significantly influences organizational cost reduction of deposit money banks in Rivers State. And the hypothesis 2 showed that workflow management system and organizational profitability has positive significant correlation at $r = .959^{**}$ where $P\text{-value} = .000$ ($P < 0.005$). This implies a strong and significant relationship between both variables at 95% level of confidence. This is an indication that workflow management system increasing the profitability level of deposit money banks in, Rivers State.

5. CONCLUSION AND RECOMMENDATIONS

The study concluded that workflow management system enhanced administrative efficiency (cost reduction and profitability). Organizations that implement effective workflow management system experience good business cost reduction and increases profitability. Importantly, workflow management system is an effective tool for administrative efficiency in the digital era and is applicable to all kind of organization outside the banking sector.

The following recommendations are hereby made:

1. Workflow management system should be properly implemented in the organization as it enhances effective work procedures leading to organizational cost reduction.
2. The employees should be properly educated and train to know the important of workflow management system as it enhances organizational profitability.

Competing Interest: The authors declare that there is no competing or conflicting interest in this manuscript.

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