# ENTERPRISE RESOURCE PLANNING (ERP) SYSTEM QUALITY AND FINANCIAL PERFORMANCE

(A study of MTN GROUP, LAGOS STATE, NIGERIA)

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#### **ABSTRACT**

This study examined the relationship between Enterprise Resource Planning (ERP) system quality and financial performance, with Enterprise Resource Planning (ERP) proxied as system uptime, error time and user satisfaction whereas financial performance measured by return on assets (ROA). A descriptive research design was employed. The population comprised employees of MTN operating within Ogba, Lagos State, Nigeria. A sample of 108 respondents was selected using stratified random sampling technique, targeting employees available at selected MTN offices and data was collected using a self-developed structured questionnaire, which was designed based on existing literature and aligned with the study's objectives. Data was analyzed using multiple regression analysis. The findings indicated that system uptime had an insignificant effect on ROA since the p-value of 0.099 was greater than 5% level of significance whereas error time and user satisfaction had significant effect on ROA since their p-value of 0.000 was less than 5% level of significance. The study concluded that Organizations seeking to enhance their financial performance should invest not only in maintaining reliable systems but also in reducing operational errors and maximizing user satisfaction. The study recommended that firms should implement user-centric designs, gather regular feedback, and continuously improve the usability and responsiveness of their systems.

**Keywords:** Enterprise resource planning (ERP), system uptime, error time, user satisfaction, financial performance.

## 1. INTRODUCTION

Enterprise Resource Planning (ERP) is a software system that combines core business processes such as account and finance, human resources management, supply chain, and production to one platform. It enhances data accuracy, streamlines operations, and supports decision-making by providing real-time insights and centralized access to organizational information across departments (Biswas et al, 2024).

Company performance can be described as a key measure of an organization's success, generally assessed through financial metrics, operational efficiency, market share, and customer satisfaction. ERP system is often adopted by companies with the expectation that they will improve company performance by reducing operational inefficiencies, enhancing data accuracy, and providing real-time business intelligence (Alonge et al., 2013)

In spite of the expected benefits, the impact of ERP implementation on company performance remains a topic of debate. Some organizations report notable improvement after post-implementation while others face challenges such as high costs, implementation failures, and resistance to change. It is essential for companies that want to optimize their investment in technology to understand and appraise the relationship between ERP adoption and company performance (AL-Shboul, 2019)

These days, the technology is evolving and the business environment is very dynamic, there is high reliance on ERP systems to streamline operations and improve decision-making by companies.

Nevertheless, the effectiveness of ERP systems differs, it is usually based on their quality and integration. This paper examines how ERP system quality impacts company performance, channeling research findings of key performance indicators such as ROA and revenue growth (Tudose et al., 2022).

Many organizations invest heavily in ERP systems with the expectation of improved efficiency and better financial performance. However, not all companies achieve the desired outcomes. ERP implementation is a complex process that requires strategic planning, huge investment, and organizational restructuring. Some companies find themselves in unexpected or uncalculated situations such as cost overruns, delays process, and inadequate training, leading to suboptimal system utilization therefore there are implementation challenges (Asiedu & Ameyaw, 2021). Likewise, ERP systems need to be seamlessly integrated with existing business applications and legacy systems. Poor integration can lead to data inconsistencies, workflow disruptions and compatibility problems, which will have negative effecting on productivity and decision-making (Ahmed, 2025). Furthermore, organizational unwillingness often hinders the realization of ERP benefits. Additionally, there is limited empirical evidence of the relationship between ERP adoption and companies' performance. This has brought curiosity and necessity to analyse and evaluate the extent to which ERP systems contribute to organizational success (Alonge et al., 2023)

The primary objective of this study is to assess how ERP system quality affects company performance. Specifically, it aims to examine the impact of ERP system quality on company profitability and revenue growth.

Studying ERP (Enterprise Resource Planning) system quality and financial performance is significant because it will enable organizations to understand the level of influence, investments in ERP systems have on the overall business success, particularly in terms of efficiency, profitability, and competitiveness. Furthermore, analyzing ERP system quality helps identify gaps in usability, integration, and user satisfaction, which can hinder financial performance if not addressed. Finally, studying ERP system quality in relation to financial performance allows companies to align IT capabilities with strategic financial goals, maximize returns on ERP investments, and ensure long-term sustainability and growth.

#### 2. Literature Review

# 2.1 Conceptual Review: Enterprise Resource Planning (ERP)

The term ERP is a type of modular software that originated from MRP II Manufacturing Resources Planning system. The Gatner Group created the acronym ERP, which has grown popular in recent years. Usually, every department or function owns and operates a computer system designed for the regular activities of the company. Classic closed database architectures with distinct and isolated databases are generally used by businesses, which leads to poor system communication. Enterprise resource planning (ERP) in essence integrates everything into a single, networked system that retrieves databases, provides a range of information, and enhance communication within and outside the organizational. This is achieved by linking the supplier to the consumer, ERP systems help to ensure a smooth and transparent flow of information across the company. ERP systems are developed with application-independent databases. Through application-based views that display data in a pertinent way for all users (Pracita et al., 2018), information is transmitted between them.

# 2.1.1 System Uptime

System uptime can be described as the total amount of time a computer system, server, or network has been continuously operational without interruption. It is one of the key performance indicators for measuring the reliability and stability of IT infrastructure and software. High system uptime means that services are consistently available, which is necessary for businesses that rely on digital operations. Uptime is often expressed as a percentage of total available time, with benchmarks like "99.9% uptime" generally used in service level agreements (SLAs) (Rouse, 2023). To maintain a high uptime, this will involves implementing effective monitoring, periodic maintenance, redundant systems, and fast response to failures or threats. On the other hand, downtime can lead to productivity losses, reduced customer trust, and financial setbacks. Therefore, organizations prioritize system uptime as a critical aspect of IT management and business continuity planning.

#### 2.1.2 Error Time

Error time have to do with the period during which a system, application, or process fails to operate correctly, as a result of malfunction, bug, update or unexpected behaviour. It can be referred to as the period between the time when the error occurs until it is identified and resolved. Error time directly affects system reliability and user experience, often leading to service disruption, data loss, or reduced performance and productivity. In IT environments, tracking error time is essential for diagnosing problems, improving system design, and minimizing future occurrences. Organizations use monitoring tools to detect errors quickly and implement corrective actions to reduce total error time. High error time often results in operational inefficiencies, additional maintenance costs, and customer dissatisfaction. Therefore, there is usually a conscious effort to reduce error time through proactive monitoring, regular updates, and fault-tolerant system design is vital for maintaining service quality and business continuity (Smith & White, 2021).

#### 2.1.3 User Satisfaction

User satisfaction refers to the degree to which end-users are pleased with a product, service, or system, based on their expectations and experiences. This is an essential indicator of

usability, functionality, and overall system performance. High user satisfaction often results in increased loyalty, continuous usage, and positive feedback, making it a vital objective for organizations offering digital services or customer support. Factors influencing user satisfaction include system reliability, response time, ease of use, and error handling (Nielsen, 2020). Measuring user satisfaction can be achieved through surveys, feedback forms, and usability tests. In some IT and software development, user-cantered design and continuous improvement practices are commonly used to enhance user satisfaction. Low satisfaction levels may indicate that the error time is low or unmet user needs, which can lead to negative reviews and eventual system abandonment. Monitoring and improving user satisfaction is essential for maintaining a competitive edge and ensuring long-term usage and success.

# 2.1.4 Financial performance

Financial Performance can be defined as the measure of success or failure of a company's activities and its functions in helping the company to meet its aims, vision, and objectives. The difference between the companies' expenditures and its revenues can be used to evaluate its financial performance. Performance can be defined as the level of success that a company has achieved over a specified period.

Performance of company can be determined by standards that have been established, and the positions it has created over a particular period (Edelia & Aslami, 2022). The knowledge of the status of companies of all sizes and appropriate benchmarks with companies of similar sizes or in similar industries will be helpful in assessing the company performance. Stakeholders sometimes conclude that agreed performance is the capacity, effort, and opportunity of a person, team, or corporate unit to fulfill assigned tasks so as to achieve the declared strategic goals. Some of the usual performance measures are return on investment (ROI), return on equity (ROE), and return on assets (ROA). A ratio extracted from the company's balance sheet and income statement can be used as the accounting financial performance indicator of this firm. (Hau Nguyen et al., 2021)

Due to the importance of evaluating and reviewing the firm's activities, its performance can be advantageous to its management. This clarifies the financial condition of the business based on its actions. The operations of a firm are influenced by a number of factors, including leverage, size, and environmental performance; hence, management should give this due attention. To aid better corporate performance, a balanced approach on leveraging, environmental performance, and firm size should also be implemented in line with current legislation.

# 2.1.5 Return on Assets

Return on Assets (ROA) is one of the financial performance metrics, it is useful to company to check assets utilization efficiency in relation to profit making. Net income divided by total assets can be used to calculate it. ROA shows the company's ability to convert its investments in assets into earnings (Ross, Westerfield, & Jordan, 2019). A high ROA shows that a company is more efficient in managing its assets to produce income, ROA is a very relevant ratio for capital intensive industries such as manufacturing and transport companies.

ROA useful for investors and analysts in comparing profitability across companies regardless of size, especially within the same industry. It provides insights into management's

effectiveness in deploying resources to achieve desired financial outcomes (Brealey, Myers, & Allen, 2020). For analyst purpose, a low ROA may indicate underutilized assets or inefficient operations, while a high ROA may signal strong operational performance and sound financial decision-making

#### 2.2 Theoretical Review

Many theoretical models have been used in earlier studies to investigate how ERP affects company performance: the theory of production economics, the theory of competitive strategy, theory of the consumer, the efficient market hypothesis, and the theory of complementarity. Following a production theoretical approach, studies of companies embracing ERP offer evidence of enhanced profitability relative to non-adopting companies for ERP; other studies do not demonstrate comparable evidence. (Hitt et al. 2002) discovered evidence that strategic performance increased relative to non-ERP-adopting companies after firms started using ERP.

# 2.2.1 Criticisms of Production Theory

Ignores Market Imperfections – Real-world markets have monopolies and inefficiencies (Stiglitz & Greenwald, 2014). It also assumes static technology – Does not account for rapid technological changes (Schumpeter, 1942/2010). Simplified Input-Output Relationship – Real production involves complexities like supply chain disruptions (Porter, 1985). Limited Applicability in Services – More suitable for manufacturing than service industries (Brynjolfsson & McAfee, 2014).

## 2.2.2 Application to ERP System Quality and Company Performance

Enterprise Resource Planning (ERP) systems integrate business processes this will improve efficiency. The Theory of Production Economics can be linked to ERP quality and company performance as follows - Optimized Resources: High-quality ERP systems allocate resources efficiently, reducing waste and improving productivity (Monk & Wagner, 2012). It enhanced decision-Making - Accurate data

helps businesses adjust production levels based on demand (Davenport, 1998). Improved Cost Management – Reduces costs by streamlining processes like procurement, inventory, and payroll (Koh et al., 2008). Increased Output with Fewer Inputs – Automation improves efficiency, leading to higher output with minimal labor and material waste (Brynjolfsson & Hitt, 2000). Supports Scalability – Helps companies manage production expansion effectively (Monk & Wagner, 2012).

Thus, ERP system quality directly enhances production efficiency, leading to better company performance in terms of profitability, cost reduction, and operational effectiveness.

# 2.2.3 Competitive Strategy Theory

Competitive strategy theory states that businesses operate in a competitive environment, and one capacity to outperform competitors determines success. According to Porter (1980), five factors shape industry rivalry:

1. Threat of new entrants 2. Negotiating power of suppliers 3. Negotiating power of buyers 4. Threat of substitute products or services 5. Intensity of competitive rivalry

He contends that companies must find and evaluate these forces in order to create and maintain a competitive advantage (Porter, 1980).

Among the advantages of Competitive Strategy: Theory stresses knowledge of the unique dynamics of a business. The theory acknowledges that different sectors have varied structures and competitive pressures and that a strategy successful in one might not be so in another. This awareness has resulted in more emphasis on industry analysis and the creation of specialized plans (Porter, 1985).

One more benefit of competitive strategy: Theory is its emphasis on building a long-lasting competitive edge. Porter contends that companies need to establish a distinctive value proposition that distinguishes them from competitors and establishes an obstacle to entry. This requires a deep understanding of customer needs and preferences and the ability to deliver a product or service that meets those needs better than anyone else (Porter, 1985).

Despite its many strengths, competitive strategy theory has also been subject to criticism. Some have argued that the theory emphasizes the importance of competition and ignores other elements that may affect corporate success, including innovation and collaboration (Brandenburger & Nalebuff, 1996). Others have said the idea is too inflexible and misses the unpredictability and complexity of the corporate world (Teece et al., 1997).

The theory of competitive strategy explains how ERP system quality influences company performance in the following ways: Cost Leadership Strategy such as High-quality ERP systems reduce operational costs by optimizing resource allocation, improving efficiency, and minimizing waste (Monk & Wagner, 2012). Differentiation Strategy such as Superior ERP systems enhance product customization, improve customer service, and provide real-time data for better decision-making (Davenport, 1998). Focus Strategy, ERP systems help firms streamline operations in niche markets by improving supply chain management and responsiveness to customer needs (Koh et al., 2008). Value Chain Optimization, ERP systems integrate various business functions (e.g., procurement, production, logistics), ensuring seamless value creation (Porter, 1985). Adaptability to Market Forces – A well-implemented ERP system helps companies respond effectively to changing industry forces, such as supplier power and customer demands (Davenport, 1998).

Thus, ERP system quality directly enhances competitive strategy, leading to improved company performance through cost efficiency, better decision-making, and competitive differentiation.

## 2.4 Empirical review

Richmond et al. (2019) investigated the effects of ERP Systems adoption and the operational performance of companies inside Kumasi. Metropolis. The goal of the research was to investigate impediments businesses face in ERP system deployment. Primary data was used by the researchers; questionnaires and interviews served as instruments for data gathering. The investigators discovered that firms' performance has improved as a result of the adoption

of an ERP system. For many tiny or infant companies, the expense of buying, installing, and maintaining an ERP system is a barrier. The research showed some flaws regardless of the strengths of ERP systems like high security and backup features. In the rapidly changing technical environment, the researchers advised that all forms of firms should try to implement ERP systems in their activities in order to flourish in the global competitive and dynamic market context.

Anderson and Banker (2011) examined how the length of ERP adoption affects firm performance before and after implementation. Companies either use an accelerated implementation approach or a conventional (lengthier) one. The former approach gives the organization the advantage of speed, but the disadvantage of fitting its processes to that of a packaged (thus, undifferentiated from competitors) ERP. The latter approach allows the organization to redesign strategy and processes, and thus, search for ways to be unique from its competition. The study uses a regression model to capture the changes in various performance metrics over and after implementation between companies that implemented the ERP were evaluated using the performance measure of a matched group of firms that did not implement an ERP as a benchmark/ control sample, on the basis of the length of the implementation. Financial information from Compustat and data on start date and end date of ERP implementation between 1990 and 2005 for businesses in the Oil and Gas industry were acquired from an ERP provider. Results reveal that measures including return on sales increased upon application. Measures like inventory turnover, which indicate operational advantages, however, increase during implementation. We see strategic as well as operational advantages from quick execution.

## 3.0 Methodology

## 3.1 Research Design

This research adopts a descriptive survey design to obtain insights into the relationship between ERP systems quality and company financial performance. The study employs a quantitative approach, leveraging structured questionnaires distributed to employees, IT professionals, and managers in various industries. It was analysed using statistical tools such as SPSS. Descriptive statistics (mean, median, standard deviation) and inferential analysis (correlation, regression)

#### 3.2 Population

The target population includes companies that have implemented ERP systems, specifically 148 employees of MTN in Ogba, Lagos State, Nigeria. The questionnaire was a close ended questions which was developed to meet the researcher information.

The selected participants have experience using ERP systems and can provide informed responses regarding their impact on performance.

## 3.3. Sample Size and Sampling Techniques

To guarantee a representative sample across several departments and hierarchical levels in organizations, a stratified random sampling method was employed. The study used the Taro Yamane method for sample size estimation to ascertain the sample size of the population,

therefore knowing the sample size of the research. This was chosen for the research since it yields a clear and precise result of the most fitting sample size.

#### Taro Yamane formula:

$$n = \frac{N}{1 + N(e)^2}$$

Where:

n= sample size

N =Population size which is 148

e = Maximum acceptable error Margin which is 5% (0.05)

Confidence level = 95%

Therefore, the sample size is calculated as;

$$n = \underline{148}$$

$$1+148(0.05^{2})$$

$$n = \underline{148}$$

$$1.37$$

n = 108

#### 3.4 Data Collection Method

Data was collected by administering a structured questionnaire to one hundred and eight (108) employees of MTN, Ogba, Lagos State under study. The choice of this method of data collection was to ensure reliability and validity of data collected.

# 3.5 Method of Data Analysis

Descriptive as well as inferential statistics were used to examine data. To examine the respondents' profile and background information, frequencies and percentages were used. Though the survey's validity was evaluated before dissemination to respondents; at the time of analysis, the component analysis test was performed to evaluate the validity of each of the questions/statements used to reach the study's conclusion.

#### 4. Results and Discussions

# **Table 1: Regression Analysis**

Coefficients <sup>a</sup>						
Model		Unstandardized		Standardized	t	Sig.
		Coefficients		Coefficients		
		В	Std. Error	Beta		
1	(Constant)	1.240	0.380		3.263	0.001
	System Uptime	-0.171	0.103	-0.155	-1.656	0.099
	Error Time	-0.428	0.098	-0.524	-4.375	0.000
	User Satisfaction	1.332	0.105	1.482	12.744	0.000
a. Dependent Variable: Return on Assets (ROA)						

**Source:** Author's Compilation (2025)

The regression analysis in above table evaluated the effect of three independent variables such as system uptime, error time, and user satisfaction on the dependent variable, Return on Assets (ROA). The constant value was 1.240 with a standard error of 0.380, and it was statistically significant (p = 0.001), indicating that when all predictors were held constant, the baseline ROA was positive.

System uptime had an unstandardized coefficient of -0.171 with a standard error of 0.103 and a t-value of -1.656. Although it showed a negative relationship with ROA, the p-value of 0.099 suggested that the effect was not statistically significant at the 0.05 level. This implied that variations in System Uptime did not have a meaningful impact on ROA.

Error time had a significant negative effect on ROA, with a coefficient of -0.428 and a p-value of 0.000. This indicated that as error time increased, ROA significantly decreased.

In addition, user satisfaction had a strong and positive influence on ROA. With a coefficient of 1.332 and a p-value of 0.000, the results showed that higher user satisfaction led to a substantial and statistically significant increase in ROA. This made User Satisfaction the most influential predictor in the model.

# 4.1 Discussion of Findings

The findings of this study revealed mixed effects of operational performance indicators on Return on Assets (ROA). Firstly, system uptime showed a negative but statistically insignificant relationship with ROA. This result aligns with the argument by Singh and Sharma (2021), who noted that uptime alone may not directly influence financial performance unless it is supported by effective system utilization and strategic alignment. However, this finding contrasts with the work of Adeoye and Bakare (2022), who emphasized that higher system uptime reduces downtime, enhances workflow continuity, and leads to improved financial performance.

In contrast, error time had a significant negative impact on ROA. This result is supported by Oseni and Olatunji (2023), who argued that longer periods of system errors disrupt business operations, increase costs, and undermine organizational profitability. Their research stressed the importance of minimizing errors to maintain system efficiency and achieve favourable financial outcomes.

User satisfaction emerged as the most influential predictor, showing a strong positive effect on ROA. This finding is consistent with the work of Kim and Lee (2020), who demonstrated

that satisfied users are more likely to remain loyal, promote the brand, and contribute to increased organizational revenue.

However, Ogunleye (2021) cautioned that user satisfaction may not always result in immediate financial benefits unless it leads to increased consumer spending or retention. Despite differing views, the results of this study emphasize the importance of enhancing user satisfaction and minimizing operational disruptions to improve financial performance.

#### 5.0 Conclusion and Recommendations

#### 5.1 Conclusion

The study examined the influence of Enterprise Resource Planning (ERP) on financial performance, aiming to understand how operational efficiency and user experience impact financial performance.

The findings provided key insights into the relationship between these variables and firm profitability. While system uptime displayed a negative relationship with ROA, the effect was not statistically significant, suggesting that uptime alone may not directly drive asset efficiency. This finding implies that simply maintaining system availability does not automatically translate to improved financial performance unless accompanied by effective utilization and strategic application of IT resources.

Nevertheless, error time had a significant negative impact on ROA, this shows that system downtime, frequent system disruptions or operational errors hinders organizational efficiency and profitability. This result highlights the critical importance of minimizing downtime, improving system reliability, and implementing timely error resolution processes to support financial sustainability.

User satisfaction appears to be the most influential factor in the model, it present potent and significant positive relationship with ROA. This emphasizes the need and importance of prioritizing user experience, satisfied users tend to have consistent engagement with the system, which brings about customers loyalty to the company, they can as well recommend the company's services, all these will eventually contribute to overall business success.

In conclusion, the study emphasizes that while technological infrastructure is important, the effectiveness of its application and the experience of its users play a more decisive role in shaping financial outcomes. Organizations seeking to enhance their financial performance should invest not only in maintaining reliable systems but also in reducing operational errors and maximizing user satisfaction.

#### 5.2 Recommendations

Based on the findings of this study, several recommendations can be made to enhance organizational financial performance, particularly Return on Assets (ROA).

Organizations should prioritize the reduction of error time by investing in robust monitoring systems, regular maintenance, and proactive error management protocols. Minimizing system

disruptions not only improves operational efficiency but also reduces the financial losses associated with downtime.

While system uptime was not found to have a significant impact on ROA, it should not be ignored. Instead, organizations should focus on maximizing the effectiveness of uptime by ensuring that systems are not only available but also optimized for productivity and aligned with strategic goals. Employee training and proper IT governance can help achieve this.

Most importantly, the study highlights the critical role of user satisfaction in improving ROA. Therefore, firms should implement user-centric designs, gather regular feedback, and continuously improve the usability and responsiveness of their systems. Satisfied users are more likely to engage effectively with systems and contribute to higher operational and financial performance.

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