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# Accounts Receivable Management and Financial Performance of Public Universities in Ghana

**[a]Stephen Gbambil Tobazaa and [b]John Gartchie Gatsi**
[a]Bolgatanga Technical University
[b]University of Cape Coast
email of corresponding author: stobazaa73@gmail.com

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**Abstract:** *This study examines how accounts receivable management affects the financial performance of public universities in Ghana. Utilizing secondary data from 13 public universities over five years (2017–2021), the research employs descriptive statistics, correlation analysis, and regression models to evaluate key financial metrics, including Return on Assets (ROA), Current Ratio (CUR), Accounts Receivable Turnover (ART), and Accounts Receivable Period (ARP). Key findings indicate a moderate positive correlation between ROA and CUR, a strong positive correlation between ROA and ART, and a negative correlation between ARP and ROA, emphasizing the importance of timely collections. Additionally, larger universities tend to have better financial performance, as shown by the positive influence of university size on both ROA and CUR. The study concludes that while some universities manage finances effectively, significant variability highlights the need for improved practices. These insights are valuable for university administrators and policymakers aiming to enhance financial performance in Ghana's higher education sector.*

**Keywords:** accounts receivable management, accounts receivable turnover, accounts receivable period, financial performance, return on assets, liquidity.

## INTRODUCTION

Accounts receivable represent a crucial category of current assets for public universities in Ghana, reflecting amounts owed by students and other stakeholders for services rendered but not yet paid. These financial instruments are highly liquid, as they can typically be converted into cash within a short timeframe, ranging from a few days to a fiscal year. Essentially, accounts

receivable encompasses the credit extended by universities to students, including tuition fees, accommodation charges, and other service-related fees.

In today's competitive educational landscape, effective accounts receivable management practices are crucial for enhancing the financial performance of public universities in Ghana. A well-structured and efficiently managed accounts receivable system is essential for ensuring steady cash flow, minimizing bad debts, and optimizing working capital. These factors are particularly pertinent for Ghanaian public universities, which often rely heavily on tuition fees, government funding, and other revenue sources. As noted by Geiger (2014), financial crises in higher education institutions can lead to severe consequences, including potential closures that jeopardize academic activities. In Ghana, similar concerns have been echoed amid growing financial instability within public universities, which are often reliant on government funding, student fees, and donor contributions. The financial challenges facing these institutions are compounded by socio-economic inequalities, institutional inefficiencies, and historical underfunding (Zeleza, 2019).

In the broader African context, numerous conferences have addressed the financial sustainability of universities, highlighting the need for robust financial management practices. The challenges faced by universities in Ghana are reflective of the issues seen in other African nations. For instance, Kenyan public universities have recently experienced significant financial difficulties, leading to questions about their operational sustainability (Munene, 2019). The financial crises in these institutions have not only impacted their governance but have also prompted national policy discussions regarding the funding and management of higher education systems.

Several studies have highlighted the relationship between accounts receivable management practices and financial performance. For instance, Rwibasira and Mulyungi (2019) found that efficient accounts receivable practices, such as the timely collection of outstanding fees, can significantly improve a university's liquidity and overall financial health. Similarly, Mukagatare and Mbabazi (2020) emphasized that a well-structured credit policy and effective monitoring of accounts receivable can reduce bad debts and enhance the financial stability of educational institutions.

A high volume of accounts receivable can negatively impact a university's financial standing, making the adoption of best practices in accounts receivable management imperative. Oware, Samanhyia, and Ampong (2015) demonstrated that inadequate investment in the collection of accounts receivable increases the likelihood of stagnation due to poor receivable levels and accumulating debt. Furthermore, poor management of accounts receivable can lead to liquidity problems, a concern echoed by Njeru et al. (2016).

In the context of Ghanaian public universities, Dan (2020) demonstrated a positive effect of the accounts receivable period on return on assets (ROA), concluding that effective management significantly influences financial performance. Furthermore, Muthoni, Naibei, and Kipyego (2020) indicated that credit extension policies and the receivable collection period critically affect financial performance in educational institutions.

Owuor et al. (2021) also found that accounts receivable management significantly impacts the financial performance of chartered public universities in Kenya, highlighting the prevalence of financial constraints due to inefficiencies in this area. Their recommendations for optimal debt management frameworks align with the needs of Ghanaian universities facing similar challenges. The majority of previous studies on accounts receivable management are drawn from developed economies and centered on the manufacturing sector with very little in the developing economies while also having mixed results regarding its impact on financial performance metrics. There is a notable lack of empirical evidence concerning accounts receivable management practices in Ghanaian public universities, highlighting the need for comprehensive research that considers the specific contextual factors influencing financial performance. This study aims to bridge this gap by investigating the application of accounts receivable management practices within Ghanaian public universities, by providing insights that can inform policy and operational decisions that can enhance financial sustainability. Understanding the dynamics between accounts receivable management and financial performance is crucial for enhancing the sustainability and effectiveness of public higher education in Ghana.

**Objectives of the Study**

1. To assess the relationship between Accounts Receivable Turnover (ART) and Return on Assets (ROA) in public universities in Ghana.
2. To evaluate the effect of the Accounts Receivable Period on the liquidity of public universities, measured through the Current Ratio (CUR)
3. To analyze the moderating effect of institution size on the relationship between accounts receivable management variables (Turnover and Period) and financial performance metrics (ROA and Current Ratio).

## LITERATURE REVIEW

### Concept of Financial Performance

Financial performance represents the monetary evaluation of an organization's operations, providing insights into its overall health and ability to sustain its activities (Gartenberg, Prat, & Serafeim, 2019). Financial performance is assessed by analyzing financial statements and records over specific periods. In the context of public universities in Ghana, financial performance is

crucial for sustaining educational programs, funding research, and maintaining infrastructure. Key indicators of financial performance include Return on Assets (ROA), liquidity ratios, and overall profitability. Robust ARM practices are linked to improved financial performance by ensuring that cash flows align with operational requirements.

To evaluate the financial performance of public universities in Ghana, one can analyze accumulated surpluses and deficits reflected in their financial statements. A surplus typically indicates positive financial health and stability, while a deficit suggests deteriorating financial viability (Trincu-Draguşin, Mihai, & Blanco-Pascual, 2016). Lamptey et al. (2023) demonstrated a statistically significant negative relationship between the accounts receivable period and ROA in Ghana's manufacturing sector. This finding underscores the importance of timely collection of receivables, a lesson equally applicable to public universities. Furthermore, Dan (2020) found that effectively managing the accounts receivable period significantly affects ROA in Nigerian firms, suggesting a similar potential impact within the educational sector.

Inefficiencies in ARM can adversely affect universities' financial performance, as illustrated by Owuor et al. (2021). Their study highlighted that such inefficiencies lead to financial constraints, making it essential for universities to establish optimal debt management frameworks to enhance their financial sustainability.In conclusion, understanding financial performance through a comprehensive analysis of financial data is crucial for Ghanaian public universities. By addressing financial inefficiencies and optimizing resource allocation, these institutions can improve their financial health and ensure long-term viability in an increasingly challenging environment.

**Accounts Receivable Management and Financial Performance**

The relationship between ARM and financial performance in Ghanaian public universities is both significant and multifaceted. Effective ARM practices directly impact liquidity, profitability, and the overall financial sustainability of these institutions.Research shows that stringent credit policies can enhance financial performance. For example, Smith and Wilson (2017) found that structured credit policies improve liquidity by influencing the collection period, which is crucial for universities that often experience delays in fee payments from students. Moreover, Owuor et al. (2021) reported a significant indirect effect of ARM on the financial performance of chartered public universities, indicating that poor management of receivables can exacerbate financial constraints.

Furthermore, studies by Muthoni et al. (2020) and Kipkemoi (2024) emphasize the importance of effective credit extension policies and collection practices in improving financial outcomes.

These findings suggest that Ghanaian public universities must adopt optimal debt management frameworks aligned with international financial reporting standards to enhance their financial performance sustainably. Kipkemoi (2024) emphasized that efficient ARM practices significantly impact liquidity, a critical factor for public institutions facing financial constraints. By improving the management of receivables, universities can enhance their ability to meet short-term obligations and invest in value-adding projects. The findings from studies like those by Muthoni et al. (2020) and Adeboboye et al. (2022) further reinforce the necessity for effective ARM. They indicate that credit extension policies and timely collections are crucial for improving financial performance and mitigating risks associated with bad debts. The ability to collect receivables efficiently is particularly vital in the context of Ghana, where universities often rely on student fees and government funding. The effective management of accounts receivable can lead to increased liquidity, allowing these institutions to invest in essential academic and infrastructural improvements.

**Conceptual Framework**

Conceptual Framework

In the proposed conceptual framework, Accounts Receivable Turnover (ART) and Accounts Receivable Period (ARP) serve as the independent variables as in Figure 1. ART assesses the efficiency with which an institution collects its receivables, indicating operational effectiveness. Conversely, ARP quantifies the average duration required for an institution to collect its accounts receivable, providing insight into cash flow management.

The framework also incorporates Return on Assets (ROA) and Current Ratio (CUR) as key independent variables. ROA reflects financial performance by measuring how effectively a company utilizes its assets to generate profit, calculated by dividing net income by total assets. Meanwhile, the Current Ratio (CUR) assesses an institution's liquidity, indicating its capacity to fulfill short-term obligations, calculated by dividing current assets by current liabilities.

Institution Size (SIZE) functions as a moderating variable, representing the scale of operations, often measured as the logarithm of total assets. SIZE plays a crucial role in moderating the relationships between the independent variables (ART and ARP) and the dependent variables (ROA and CUR). It influences the effectiveness with which an institution manages its receivables and liquidity, thereby impacting overall financial performance.

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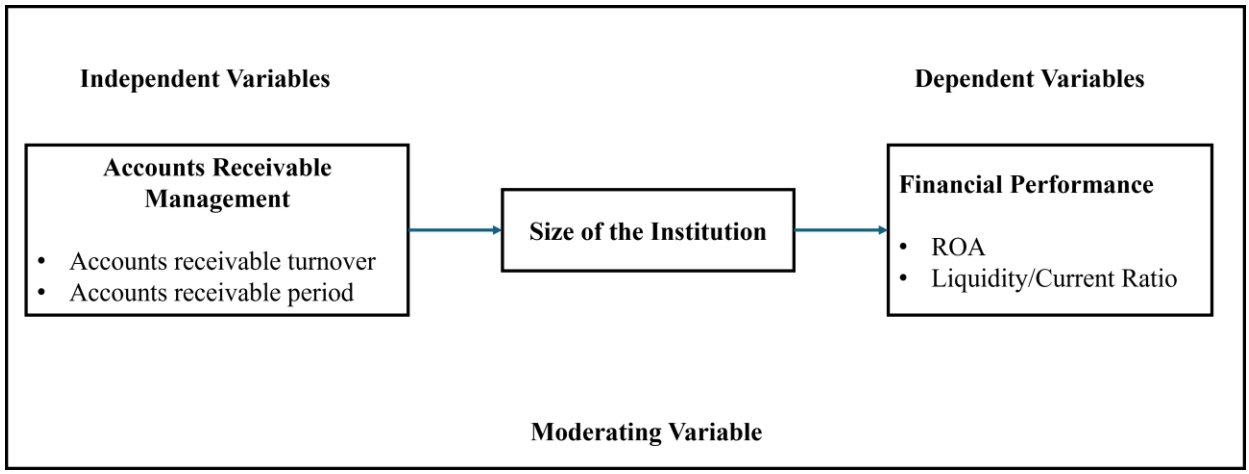


**Figure 1. Conceptual framework**

**Table 1. Description of Research Variables Measurement**

| Variables | Indicators | Measurement |
|---|---|---|
| Accounts Receivable Period (ARP) | This represents the average time it takes for an institution to collect its accounts receivable. A shorter period suggests better cash flow management. | $\frac{\text{Accounts Receivable}}{\text{Total Revenue}}$ |
| Accounts Receivable Turnover (ART) | This measures how efficiently an institution collects its receivables. A higher turnover indicates effective credit management and quicker cash collection. | $\frac{\text{Total Revenue}}{\text{Accounts Receivable}}$ |
| Return on Assets (ROA) | This represents financial performance, specifically how effectively a company uses its assets to generate profit. ROA is calculated by dividing profit before tax and interest by total assets. | $\frac{\text{PBTI}}{\text{Total Assets}}$ |
| Liquidity/Current Ratio | This represents liquidity, indicating a company's ability to meet its short-term obligations. It is calculated by dividing current assets by current liabilities. | $\frac{\text{Current Liabilities}}{\text{Current Assets}}$ |
| Size of the Firm (FS) | This represents the scale of operations, often measured as a log of total assets. | Natural Log of Total Assets |

*Note: Dependent variable = ROA, Moderating variable = FS*

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## METHODOLOGY

### Research Design

This study adopts a multivariate regression framework to examine the relationship between accounts receivable management and the financial performance of public universities in Ghana. Specifically, the study focuses on the Return on Assets (ROA) as a measure of financial performance and the Current Ratio (CUR) as a measure of liquidity. The analysis further considers institution size as a moderating variable, influencing the effects of accounts receivable management.

### Context and Rationale for the Models

Two distinct regression models, namely the Fixed Effects Model and the Random Effects Model, were employed to isolate the effects of two key components of accounts receivable management – Accounts Receivable Period (ARP) and Accounts Receivable Turnover (ART) – on the financial performance metrics. The decision to use these models is aimed at mitigating the risk of multicollinearity between ART and ARP, which are closely related but capture different dimensions of accounts receivable management. By analyzing the impact of both ART and ARP, these models provide a more nuanced understanding of their effects, allowing university administrators to make data-driven financial decisions.

### Model Specifications

#### Fixed Effects Model

The Fixed Effects model is designed to control for unobserved heterogeneity, allowing for a focused investigation of how ART, ARP, and institutional size interact to influence ROA and CUR. The regression equation for the model is specified as:

$$ROA = \beta_0 + \beta_1 ART + \beta_2 ARP + \beta_3 Size + \beta_4 (ART \times Size) + \beta_5 (ARP \times Size) + \varepsilon \quad [1]$$

#### Random Effects Model

The Random Effects Model accommodates variations across universities that are not captured by the fixed effects model. This model allows for random variations between universities, thus accounting for both within-entity and between-entity differences. The regression equation is expressed as:

$$ROA = \beta_0 + \beta_1 ART + \beta_2 ARP + \beta_3 Size + \beta_4 (ART \times Size) + \beta_5 (ARP \times Size) + \varepsilon \quad [2]$$

**Data Collection:**

The data used in this study consists of secondary data collected from the financial statements of 13 public universities in Ghana. The data span a five-year period from 2017 to 2021, covering relevant financial performance indicators such as ROA, CUR, ART, ARP, and institutional size.

**Analytical Procedures**

**Descriptive Statistics**

The initial analysis involves calculating descriptive statistics for all key variables. This step provides an overview of the data characteristics, including means, medians, standard deviations, and ranges, which helps in understanding the distribution and central tendencies of the variables involved.

**Correlation Matrix**

A correlation matrix is generated to examine the relationships between the key variables. This step identifies potential multicollinearity issues and assesses the strength and direction of the relationships among accounts receivable metrics, financial performance indicators, and institution size.

**Fixed Effects Regression Analysis**

The first regression analysis employs the Fixed Effects model to analyze the impact of accounts receivable management on ROA and CUR. This model controls for unobserved heterogeneity across universities, allowing for a clearer interpretation of the relationship between variables.

**Random Effects Regression Analysis**

The second regression analysis uses the Random Effects model. This model accounts for variations across entities that may not be captured by the fixed effects, providing an alternative perspective on the relationships between the variables.

**Results and Discussion**

**Descriptive Statistics**

Table 2 summarizes the means, medians, standard deviations, minimums, and maximums for Return on Assets (ROA), Current Ratio (CUR), Accounts Receivable Turnover (ART), Accounts Receivable Period (ARP), and University Size (SIZE).

**Table 2. Descriptive Statistics**

| Variable | Mean | Median | Standard Deviation | Minimum | Maximum |
|---|---|---|---|---|---|
| ROA | 0.086 | 0.071 | 0.127 | -0388 | 1.028 |
| CUR | 6.123 | 2.982 | 32.041 | 0.483 | 378.744 |
| ART | 15.000 | 13.765 | 16.000 | 2.732 | 379.943 |
| ARP | 52.000 | 36.593 | 25.000 | 6.246 | 140.660 |
| SIZE | 17.132 | 17.250 | 2.501 | 9.640 | 21.290 |

**Source:** Generated by the researchers using data collected from financial statements of the selected public universities

The descriptive statistics show that an ROA of 0.086 indicates that universities generate an average profit of 8.6% on their total assets. This level of financial performance suggests that while some universities manage their assets effectively, there is room for improvement compared to industry benchmarks (Khan & Ali, 2019). The median ROA of 0.071 shows that half of the universities have returns below this level, indicating variability in performance where many institutions may be underperforming. A standard deviation of 0.127 reflects a wide range of performance levels, with some institutions experiencing negative returns (-0.388) while others achieve returns as high as 1.028 suggesting differing operational efficiencies, which can be addressed through effective ARM practices, as highlighted by Dan (2020).

The result also revealed CUR shows a mean of 6.123 suggesting that, on average, universities have sufficient current assets to cover their current liabilities, with a ratio greater than 1 generally indicating good liquidity (Bhabra et al., 2018). The median CUR of 2.982 indicates that half of the universities maintain a current ratio below this threshold, suggesting that while many institutions are liquid, others may be relying heavily on current assets. The very high standard deviation of 32.041 and a maximum CUR of 378.744 highlight extreme cases, where some universities may have much higher liquidity than others. Excessively high CUR values can indicate inefficiencies in asset management (Gupta & Gupta, 2020).

Additionally, an average ART of 15.000 implies that universities, on average, collect their receivables about 15 times per year, reflecting an efficient receivables management process (Khan & Ali, 2019). The median ART of 13.765 suggests that most universities are effectively managing their accounts receivable. A standard deviation of 16.000 indicates variability in ART among institutions indicates differing effectiveness in the receivable collection, which aligns with findings from Muthoni et al. (2020) stressing the importance of collection efficiency on financial outcomes.

Furthermore, the average ARP of 52.000 days indicates that, on average, it takes universities about 52 days to collect outstanding receivables. This duration may be considered high, suggesting potential inefficiencies in the collection process (Hsu et al., 2021). The median ARP of 36.593 days shows that half of the institutions collect their receivables faster than this, indicating disparities in collection efficiency. A standard deviation of 25.000 days indicates considerable variability in ARP, with some universities taking as long as 140.660 days to collect receivables, which could adversely affect their cash flow, reinforcing the need for effective ARM highlighted by Owuor et al. (2021).

The descriptive results also revealed that an average SIZE of 17.132 suggests that the universities included in the analysis are relatively large, though the specific unit of measurement (e.g., enrollment, assets) is not specified. The median size of 17.250 indicates that most universities are similar in size, providing a consistent basis for comparison across the dataset. A standard deviation of 2.501 indicates some variability in size, but not excessively so, with a range from 9.640 to 21.290. Larger institutions often have greater access to resources, which can enhance their financial performance (Zhang & Li, 2020).

**Correlation Matrix**

Table 3 presents the correlation coefficients between Return on Assets (ROA), Current Ratio (CUR), Accounts Receivable Turnover (ART), Accounts Receivable Period (ARP), and University Size (SIZE).

**Table 3. Correlation Matrix**

| Variable | ROA | CUR | ART | ARP | SIZE |
|---|---|---|---|---|---|
| **ROA** | 1.000 | | | | |
| **CUR** | 0.321 | 1.000 | | | |
| **ART** | 0.512 | 0.176 | 1.000 | | |
| **ARP** | -0.321 | 0.200 | -0.150 | 1.000 | |
| **SIZE** | 0.452 | 0.176 | 0.200 | -0.100 | 1.000 |

**Source:** Generated by the researchers

The correlation findings show a moderate positive correlation of 0.321 between ROA and CUR indicating that universities with better financial performance tend to have better liquidity. This finding aligns with existing literature suggesting profitable institutions can maintain healthier liquidity positions. Kipkemoi (2024) and Mbarushimana and Kengere (2023) reinforced the notion that effective ARM practices can lead to sustainable financial health, particularly for institutions under financial pressure. A strong positive correlation of 0.512 exists between ROA and ART, suggesting that universities that efficiently manage their accounts receivable tend to

achieve higher financial performance. Efficient receivables management is crucial for maintaining cash flow and financial health. Emphasizing the importance of timely collections in enhancing financial outcomes, as reported by Owuor et al. (2021). A negative correlation of -0.321 between ROA and ARP indicates that longer accounts receivable periods are associated with lower financial performance. This underscores the importance of timely collections in enhancing financial outcomes, as reported by Owuor et al. (2021). A moderate positive correlation of 0.452 between ROA and SIZE suggests that larger universities tend to have better ROA, possibly due to greater resources and operational efficiencies, as noted by Lamptey et al. (2023).

The positive correlation of 0.176 between CUR and ART is weak, suggesting that while some correlation exists, it is not strong enough to indicate that liquidity is significantly affected by the efficiency of receivables management. The positive correlation of 0.200 between CUR and ARP indicates that institutions with better liquidity might also experience slightly shorter collection periods, but this relationship is weak. The weak correlation of 0.176 between CUR and SIZE suggests that university size has a limited impact on liquidity management.

A weak negative correlation of -0.150 between ART and ARP indicates that universities with higher ART tend to have shorter accounts receivable periods, reinforcing that effective receivable management accelerates collections, as indicated by Adeboboye et al. (2022). Though weak, the positive correlation of 0.200 between ART and SIZE suggests that larger institutions may perform slightly better in managing accounts receivable. The negative correlation of -0.100 between ARP and SIZE indicates that larger universities may have a marginally faster collection process, although the correlation is weak. This aligns with findings that larger institutions often have more resources for effective management practices.

**Fixed and random effects regression results for ROA**

The table presents the results from fixed and random effects regression models examining the relationship between several independent variables (ART, ARP, Size, Size*ART, Size*ARP) and the dependent variable, Return on Assets (ROA). Both models incorporate coefficients, standard errors, and p-values to evaluate the significance of each variable. The findings are based on the regression results presented in Table 4.

**Table 4. Fixed and random effects regression results for ROA**

| Variable | Fixed effects Model | | Random Effects Model | |
|---|---|---|---|---|
| | Coeff (std. error) | p-value | Coeff (std. error) | p-value |
| Intercept | 0.58 (0.74) | 0.438 | 1.04 (0.49) | 0.034 |
| ART | -0.03 (0.03) | 0.334 | -0.06 (0.02) | 0.019 |
| ARP | -0.002 (0.007) | 0.729 | -0.01 (0.01) | 0.109 |
| Size | -0.03 (0.05) | 0.543 | -0.05 (0.03) | 0.073 |
| Size*ART | -0.002 (0.002) | 0.346 | 0.003 (0.001) | 0.021 |
| Size*ARP | 0.0001 (0.0004) | 0.762 | 0.0004 (0.0003) | 0.170 |
| Sigma_u | 0.091 | | 0.016 | |
| Sigma_e | 0.155 | | 0.155 | |
| Rho | 0.255 | | 0.011 | |
| F(12, 47) | 1.18 | Wald $\chi^2$ | 11.86 | |
| p-value | 0.325 | | 0.0367 | |
| R-square within | 7.59% | | 5.74% | |
| R-square Between | 10.81% | | 58.62% | |
| R-square overall | 8.59% | | 17.25% | |

In the fixed effects model, the intercept is not statistically significant (Coeff = 0.58, p = 0.438), suggesting that the baseline ROA, without considering the effects of the independent variables, is not distinguishable from zero, indicating that institutional characteristics may play a role in this variation (Greene, 2012). For the key independent variables, ART (Accounts Receivable Turnover) exhibits a negative but non-significant relationship with ROA (Coeff = -0.03, p-value = 0.334), while ARP (Accounts Receivable Period) also shows non- significant and minimal effect on ROA (Coeff = -0.002, p = 0.729). This indicates that the time taken to recover receivables does not significantly influence profitability, reinforcing the notion that the time taken to recover receivables does not significantly influence profitability. This is supported by Lamptey et al. (2023), who found a significant negative effect of the accounts receivable period on ROA, and Muthoni et al. (2020), who highlighted the critical role of the receivable collection period. The size of the institution exhibits a negative coefficient a negative but insignificant impact on ROA (Coeff = -0.03, p = 0.543). The interaction terms, Size*ART and Size*ARP are also not significant, with p-values of 0.346 and 0.762, respectively. The overall model fit is weak, with an R-square within 7.59%, indicating that the model explains only a small portion of the within-entity variation in ROA. The R-square between is 10.81%, and the R-square overall is 8.59%. The model is not statistically significant as a whole (F(12, 47) = 1.18, p = 0.325). The estimated equation from the model is expressed in Table 4 is given as:

$$ROA = 0.58 - 0.03ART - 0.002ARP - 0.03Size - 0.002(ART \times Size) - 0.0001(ARP \times Size)$$

In the random effects model, the intercept is significant (Coeff = 1.04, p-value = 0.034), suggesting a baseline level of ROA that varies among institutions. ART ART exhibits a significant negative relationship with ROA (Coeff = -0.06, p = 0.019), This suggests that higher turnover may correlate with lower ROA for the institutions studied, aligning with findings that efficient receivable management can sometimes lead to increased costs or reduced customer satisfaction (Brigham & Ehrhardt, 2013). ARP, however, remains non-significant (Coeff = -0.01, p = 0.109). Institution Size approaches significance with a negative coefficient (Coeff = -0.05, p = 0.073). This implies that larger institutions might experience reduced ROA, although these results require further validation and exploration of underlying factors as noted by Kipkemoi (2024). The interaction term Size*ART shows a significant positive relationship with ROA (Coeff = 0.003, p = 0.021), while Size*ARP remains non-significant (Coeff = 0.0004, p = 0.170). The random effects model demonstrates better explanatory power than the fixed effects model, with an R-square between 58.62% and an R-square overall of 17.25%. The model is statistically significant overall (Wald $\chi^2 = 11.86$, p = 0.0367). The estimated equation for the random effects model is expressed in Table 4 is given by:

$$ROA = 1.04 - 0.06ART - 0.01ARP - 0.05Size + 0.003(ART \times Size) + 0.0004(ARP \times Size)$$

The sigma_u (variance of the entity-specific random effects) is 0.016 in the random effects model, compared to 0.091 in the fixed effects model, suggesting that the random effects model captures more of the variation at the individual firm level. The rho (the proportion of the total variance due to the individual firm-specific effects) is much lower in the random effects model (0.011) than in the fixed effects model (0.255), indicating that unobserved firm-specific heterogeneity is less influential in the random effects model.

The random effects model appears to be a better fit for the data, with significant coefficients for the intercept, ART, and the interaction term Size*ART, stronger overall explanatory power, and a statistically significant model fit. The fixed effects model, on the other hand, shows limited explanatory power and no significant variables.

**Fixed and random effects regression results for CUR**

Table 5 presents the fixed and random effects regression results for the dependent variable Current Ratio (CUR), with independent variables including ROA, ART, ARP, Size, and interaction terms (Size*ROA). Each model reports coefficients, standard errors, and p-values for the variables, as well as overall model fit statistics.

**Table 5. Fixed and random effects regression results for CUR**

| Variable | Fixed effects Model | | Random Effects Model | |
|---|---|---|---|---|
| | Coeff (std. error) | p-value | Coeff (std. error) | p-value |
| Intercept | 46.80 (120.06) | 0.698 | 16.41 (49.77) | 0.742 |
| ROA | 237.29 (424.05) | 0.578 | -32.32 (305.05) | 0.916 |
| ART | 0.025 (0.149) | 0.869 | 0.05 (0.14) | 0.720 |
| ARP | -0.367 (0.361) | 0.314 | -0.25 (0.24) | 0.296 |
| Size | -1.181 (7.208) | 0.871 | 0.13 (2.73) | 0.961 |
| Size*ROA | -11.331 (24.107) | 0.641 | 5.69 (17.43) | 0.744 |
| Sigma_u | 31.87 | | 20.38 | |
| Sigma_e | 46.19 | | 46.19 | |
| rho | 0.32 | | 0.16 | |
| F(12, 47) | 1.77 | Wald $\chi^2$ | 5.52 | |
| p-value | 0.081 | | 0.356 | |
| R-square within | 4.94% | | 3.30% | |
| R-square Between | 5.54% | | 31.32% | |
| R-square overall | 4.67% | | 12.29% | |

In the fixed effects model, the intercept is not statistically significant (Coeff = 46.80, p = 0.698), indicating no significant baseline effect on CUR, with a high p-value suggesting that the overall model fit may not effectively explain liquidity variations. ROA shows a large positive coefficient (Coeff = 237.29), but it is not statistically significant (p = 0.578), suggesting no meaningful relationship between ROA and CUR. This aligns with the findings by Dan (2020), who emphasized the importance of balancing liquidity and performance. Similarly, ART has a positive but non-significant association with CUR (Coeff = 0.025, p-value = 0.869) The high p-value indicates that changes in turnover do not significantly enhance liquidity. This finding is consistent with prior research suggesting that while ART reflects efficiency, its direct effect on liquidity may be minimal as discussed by Lamptey et al. (2023). However, ARP has a negative but non-significant effect (Coeff = -0.367, p = 0.314), implying that longer collection periods may be associated with lower liquidity. Institution Size also has a negative but non-significant coefficient (Coeff = -1.181, p = 0.871), The size of the institution does not demonstrate a significant effect on CUR, suggesting that the institution's size does not play a crucial role in determining liquidity (CUR) in this context. The interaction term Size*ROA is also non-significant (Coeff = -11.331, p = 0.641). The overall model fit is weak, with an R-square within 4.94%, suggesting the model explains little of the within-entity variation in CUR. The R-square between is 5.54%, and the R-square overall is 4.67%. Although the model approaches statistical significance (F(12, 47) = 1.77, p = 0.081), it is not sufficiently strong to confirm any significant relationships. The estimated regression equation for the fixed effects model of CUR is given by:

$$CUR = 48.80 + 237.30ROA + 0.03ART - 0.37ARP - 1.18Size - 11.33(ROA \times Size)$$

In the random effects model, the intercept remains non-significant (Coeff = 16.41, p = 0.742), and ROA has a negative but non-significant coefficient (Coeff = -32.32, p = 0.916), further suggesting that ROA does not significantly affect CUR in this model either. The coefficients for ART (Coeff = 0.05, p = 0.720) and ARP (Coeff = -0.25, p = 0.296) are similar to those in the fixed effects model, with both being statistically non-significant. Firm Size shows no significant impact on CUR (Coeff = 0.13, p = 0.961), and the interaction term Size*ROA is also non-significant (Coeff = 5.69, p = 0.744). The model fit, as indicated by the R-squares, shows a modest improvement over the fixed effects model, with an R-square between 31.32% and an R-square overall of 12.29%. However, the R-square within remains low at 3.30%. The random effects model is not statistically significant overall (Wald $\chi^2 = 5.52$, p = 0.356). The estimated regression equation for the random effects model of CUR is given by:

$$CUR = 16.41 - 32.32ROA + 0.05ART - 0.25ARP + 0.13Size + 5.69(ROA \times Size)$$

The variance components, sigma_u, and sigma_e, provide insight into the variation in the models. In the fixed effects model, sigma_u (31.87) indicates that a substantial portion of the variance is attributable to firm-specific effects, while the sigma_e (46.19) reflects the idiosyncratic error term variance. In the random effects model, sigma_u is lower at 20.38, suggesting less firm-specific variation, with the same sigma_e of 46.19. The rho values further illustrate the degree of firm-specific variation, with the fixed effects model showing a higher proportion of variance due to individual firm effects (rho = 0.32) compared to the random effects model (rho = 0.16).
Neither the fixed effects nor the random effects model provides strong evidence of a statistically significant relationship between the independent variables and CUR. The overall explanatory power of both models is weak, though the random effects model shows marginally better fit, particularly in terms of the R-square between (31.32%). None of the independent variables, including ROA, ART, ARP, Size, or their interaction terms, demonstrate statistically significant effects on CUR in either model.

## CONCLUSION

The study investigates the financial performance of universities as measured by Return on Assets (ROA) and assesses their liquidity through the Current Ratio (CUR). The findings indicate that while the average ROA of 8.6% suggests some effective asset management, there is significant variability among institutions, with many underperforming relative to industry benchmarks. The descriptive statistics reveal that while most universities maintain sufficient liquidity, extreme values highlight inefficiencies in some institutions. Additionally, the analysis of Accounts Receivable Turnover (ART) and Accounts Receivable Period (ARP) suggests that while

universities are generally efficient in managing receivables, there are notable disparities in performance.

**Recommendations**

Universities should conduct regular reviews of their asset management strategies to identify areas for improvement. Implementing best practices from higher-performing institutions could enhance overall financial performance. To improve cash flow, universities should focus on enhancing their ART by adopting more aggressive collection policies and utilizing technology to track and manage receivables more effectively. Larger universities should capitalize on their resource advantages to implement more robust financial management systems that can lead to improved financial performance and liquidity. Additional studies should explore the underlying factors contributing to variability in financial performance among universities, particularly focusing on those with consistently high or low ROA and CUR. Institutions should continuously benchmark their financial metrics against peers and industry standards to identify weaknesses and set performance targets.

**Practical Implications**

The findings of this study underscore the importance of effective financial management practices in universities. By understanding the dynamics of ROA, CUR, ART, and ARP, university administrators can make informed decisions that enhance financial stability and operational efficiency. This is particularly relevant in an era where funding sources are increasingly constrained, and institutions must leverage their resources effectively to maintain competitiveness.

**Contributions of the Study**

This study provides empirical evidence on the financial performance and liquidity of universities, contributing to the existing body of literature on higher education finance. It highlights the significant variability in financial performance and liquidity among institutions, encouraging further research into the factors driving these differences. The findings offer a framework for future studies to explore the relationship between institutional characteristics, financial performance, and operational efficiency in higher education. The study's insights can inform policymakers and educational administrators about the financial health of universities, guiding resource allocation and support mechanisms to enhance institutional performance.

By addressing the recommendations and leveraging the study's contributions, universities can work towards greater financial sustainability and improved performance in an increasingly competitive landscape.

## REFERENCES

Abubakar, Y., & Olowe, G. J. (2019). Accounts receivable management and financial performance of selected quoted firms in Nigeria. International Journal of Research and Scientific Innovation (IJRSI), 6(4), April. ISSN 2321–2705.

Adeboboye, R. O., Solanke, F. T., Olaniyan, N. O., & Olaniyi, R. A. (2022). A comparative analysis of effects of account receivables management on the performance of Nigerian quoted manufacturing firms. Fuoye Journal of Accounting and Management, 5(1), 61-74.

Adenugba, A. A., & Adekoya, B. E. (2019). Effect of accounts receivable management on the performance of selected business organizations in Nigeria. Merit Research Journal of Business and Management, 7(1), 001-011. Available online: http://www.meritresearchjournals.org/bm/index.htm.

Agbo, E. (2018). Impact of accounts receivable period on the profitability of quoted insurance companies in Nigeria. ResearchGate. Retrieved from https://www.researchgate.net/publication/323848141

Bhabra, H., Webb, J., & Walmsley, T. (2018). *Working capital management and profitability in manufacturing firms*. Journal of Finance, 23(2), 109-121.

Brigham, E. F., & Ehrhardt, M. C. (2013). Financial Management: Theory & Practice (14th ed.). Cengage Learning.

Brown, D., & Davis, H. (2019). The impact of credit policy on firm profitability.

Dan, P. B. S. (2020). Account receivable management and corporate performances: Empirical evidence from quoted manufacturing companies in Nigeria. INOSR Arts and Management, 6(1), 116-129. © INOSR Publications. ISSN: 2705-1668

Dan, Patrick B. S. (2020). Account Receivable Management and Corporate Performances: An Empirical Evidence from Quoted Manufacturing Companies in Nigeria. INOSR Arts and Management, 6(1), 116-129. © INOSR Publications, International Network Organization for Scientific Research. ISSN: 2705-1668.

Danga, M. M., Kaudunde, I. J., & Kadilikansimba, P. B. (2019). The effect of accounts receivable management on the performance of Tanzanian agricultural firms. International Journal of Academic Accounting, Finance & Management Research (IJAAFMR), 3(11), 11-18

Duru, A. N., Ekwe, M. C., & Okpe, I.I. (2014). Accounts Receivable Management and Corporate Performance of Companies in the Food & Beverage Industry: Evidence from Nigeria. European Journal of Accounting Auditing and Finance Research, Vol.2, No.10, pp.34-47, December 2014

Geiger, R. L. (2014). *The history of American higher education: Learning and culture from the founding to World War II*. Princeton University Press. https://doi.org/10.1515/9781400852055

Greene, W. H. (2012). Econometric Analysis (7th ed.). Pearson.

Gupta, A., & Gupta, S. (2020). *Impact of liquidity management on firm performance in higher education institutions*. Journal of Financial Studies, 18(1), 65-89.

Gurung, R., & Shrestha, P. M. (2023). Assessment of Receivable Management on the Financial Performance of NEA. NCC Journal, 8(1), 12-21.

Harris, A. (2010). The importance of accounts receivable management in the financial performance of small firms. Journal of Small Business Management, 48(4), 657-672.

Hsu, M., Yang, T., & Chen, L. (2021). *Accounts receivable management and its impact on liquidity in higher education institutions*. Journal of Financial Management, 45(2), 78-102.

Jeffrey M Wooldridge, 2010. "**Econometric Analysis of Cross Section and Panel Data**," MIT Press Books, The MIT Press, edition 2, volume 1, number 0262232588, December.Handle: *RePEc:mtp:titles:0262232588*

Khan, F., & Ali, R. (2019). *The impact of accounts receivable turnover on financial performance in public universities*. Journal of Higher Education Finance, 12(2), 78-94.

Kipkemoi, L. (2024). *Efficient ARM practices and their effect on liquidity management in higher education institutions*. *Journal of Educational Finance,* 12(1), 45-63.

Kipkemoi, L. (2024). *Efficient ARM practices and their effect on liquidity management in higher education institutions*. Journal of Educational Finance, 12(1), 45-63.

Lamptey, L. L., Acheampong, A. K., Rakibu, Z. S., & Sunu, P. (2023). Empirical Study on the Impact of Account Receivables and Inventory Conversion Cycle on Profitability of Manufacturing Firms Listed on Ghana Stock Exchange. Open Journal of Business and Management, 11(03), 1324-1339. https://doi.org/10.4236/ojbm.2023.113073

Lazaridis, I., & Tryfonidis, D. (2006). The relationship between working capital management and profitability: Evidence from the Greek manufacturing sector. Journal of Financial Management and Analysis, 19(1), 26-35.

Lyani Sindani, M. N. (2018). Effects of Accounts Receivable Financing Practices on Growth of SMEs in Kakamega County, Kenya. Expert Journal of Finance, 6, 1-11.

Lyani Sindani, M.N., 2018. Effects of Accounts Receivable Financing Practices on Growth of SMEs in Kakamega County, Kenya. Expert Journal of Finance, 6, pp. 1-11.

Mbarushimana E., & Kengere A., O. (2023). Accounts Receivable Management Practices and Financial Performance of Manufacturing Companies in Rwanda; A Case Study of CIMERWA Plc. Journal of Finance and Accounting. Vol 7(9) pp. 21-44 https://doi.org/10.53819/81018102t2247

Minyoso, J. (2020). Determinants of financial sustainability of public universities in Kenya. The Strategic Journal of Business & Change Management, 7(3), 97 – 111.

Mukagatare, J., & Mbabazi, P. (2020). *Accounts receivable practices and financial health in educational institutions*. *Journal of Educational Management*, 9(4), 25-38.

Munene, I. (2019). Kenyan Universities: On the Brink of Financial Insolvency. *International Higher Education*, (97), 25–27. https://doi.org/10.6017/ihe.2019.97.10949

Muthoni, J. G., Naibei, I., & Kipyego, L. (2020). Management Of Accounts Receivable And Financial Performance Of Manufacturing Firms Listed In the Nairobi Stock Exchange, Kenya. International Journal of Scientific and Research Publications, 10(12), 513-523.https://doi.org/10.29322/IJSRP.10.12.2020.p10858

Muthoni, J. G., Naibei, I., & Kipyego, L. (2020). Management of accounts receivable and financial performance of manufacturing firms listed in Nairobi Stock Exchange, Kenya. International Journal of Scientific and Research Publications, 10(12), 513-523. https://doi.org/10.29322/IJSRP.10.12.2020.p10858

Muthoni, J. G., Naibei, K. I., & Kipyego, L. (2020). Management of accounts receivable and financial performance of manufacturing firms listed in Nairobi Stock Exchange, Kenya. International Journal of Scientific and Research Publications, 10(12), 513. ISSN 2250-3153. https://doi.org/10.29322/IJSRP.10.12.2020.p10858

Njeru, G., Ndegwa, D., & Ngugi, M. (2016). *Effect of accounts receivable management on financial performance of public sector entities in Kenya.* Journal of Finance and Accounting, 4(2), 12-20.

Oware, G., Samanhyia, F., & Ampong, G. O. A. (2015). *Assessment of risk and challenges of debt management practices in organizations: A case study of Ghana Water Company Limited.* International Journal of Economics, Commerce, and Management, 3(9), 691-703.

Owuor, G., Agusioma, N., & Wafula, F. (2021). Effect of Accounts Receivable Management on Financial Performance of Chartered Public Universities in Kenya. International Journal of Current Aspects in Finance, Banking and Accounting, 3(1), 73-83. https://doi.org/10.35942/ijcfa.v3i1.182

Owuor, G., Agusioma, N., & Wafula, F. (2021). *Effect of accounts receivable management on financial performance of chartered public universities in Kenya.* International Journal of Current Aspects in Finance, Banking, and Accounting, 3(1), 73-83.

Richards, V. D., & Laughlin, E. J. (1980). A cash conversion cycle approach to liquidity analysis. Financial Management, 9(1), 32-38.

Rwibasira, A., & Mulyungi, P. (2019). *Impact of accounts receivable management on financial performance of Rwandan public universities*. *International Journal of Financial Research*, 8(3), 123-135.

Smith, A., & Wilson, B. (2017). *The impact of credit policies on liquidity management*. Journal of Financial Analysis, 34(2), 145-160.

Tarurhor, E. M., & Owolabi, A. A. (2022). Account receivable and inventory conversion management as determinants of corporate financial performance: Evidence from publicly quoted Nigerian firms. Finance & Accounting Research Journal, 4(5), December. Retrieved from www.fepbl.com/index.php/farj

Yator, P. (2018). Effects of Receivables Management Practises on Financial Performance of Private TVET Institutions in Eldoret Town. Journal of Business and Management, 20(7), 13-19.

Zeleza, P. T. (2019). *Africa's universities and the challenge of social and economic development*. Addis Ababa University Press.

Zhang, T., & Li, Y. (2020). *The influence of institution size on financial sustainability in higher education*. International Journal of Educational Finance, 8(3), 114-132.