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Corporate liquidity as a predictor variable of firm earnings in the Nigerian agricultural sector

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Abstract
Purpose: This study examines the effect of corporate liquidity on the earnings of listed agricultural firms in Nigeria. The proxies of corporate liquidity are net working capital and cash level.
Method: This study adopted an ex-post facto research strategy. The population consisted of five listed agricultural firms in Nigeria, and census sampling was applied in the study. Secondary data were gleaned from the annual reports of firms from 2014 to 2023. A fixed-effects estimation model was used to test the hypotheses.
Results: Net working capital has a significant positive effect on the earnings of listed agricultural firms in Nigeria, and cash level has a significant positive effect on the earnings of listed agricultural firms in Nigeria.
Conclusions: Firms that can optimize their liquidity positions are more agile in taking advantage of business opportunities, such as acquiring raw materials at favorable prices or capitalizing on market demand surges.
Limitations: A key limitation of this study is its relatively small sample size, as it exclusively examines listed agricultural firms in Nigeria. Consequently, these findings may not be fully generalizable to unlisted agricultural firms.
Contribution: This study contributes to the literature by filling a critical gap by focusing on sector-specific profitability metrics, as it offers a new perspective on the liquidity-performance relationship in Nigerian agricultural firms.
Implications: Financial managers of listed agricultural firms in Nigeria need to adopt proactive working capital management strategies by ensuring efficient accounts receivable collection and maintaining a balanced accounts payable structure.

Keywords: *Corporate Liquidity, Firm Earnings, Listed Agricultural Firms*

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1. Introduction

In recent decades, corporate liquidity management has become a critical focal point in both academic research and business practice owing to its fundamental role in shaping a firm's financial health and long-term sustainability (Ishak & Selamat, 2025; Mertzanis, Ellili, Marashdeh, & Nobanee, 2025; Ndruru, 2025; Nguyen, Le, & Van Nguyen, 2024). Corporate liquidity, in its simplest form, refers to a firm's ability to meet short-term obligations and operate efficiently without financial distress. It encapsulates key financial elements, such as net working capital, cash reserves, and other current assets relative to liabilities. In developing economies such as Nigeria, liquidity management is particularly

crucial given the dynamic and often unpredictable macroeconomic environment characterized by fluctuating interest rates, inflationary pressures, currency volatility, and inconsistent government policies (Laghari, Chengang, Chenyun, Liu, & Xiang, 2022; Vladimirova, Schiereck, & Stroh, 2023). The agricultural sector, being one of the oldest and most vital contributors to Nigeria's Gross Domestic Product (GDP), faces significant liquidity management challenges, which directly affect its performance and profitability. Unlike their informal counterparts, listed agricultural firms are expected to adhere to rigorous financial management standards. However, they still face unique sectoral constraints, such as seasonal revenue fluctuations, high production risks, and supply chain bottlenecks, making effective liquidity management imperative for sustained earnings growth (Bello, Yahaya, & Adamu, 2024; Nwuba & Okoli, 2022).

Effective corporate liquidity management has become more relevant than ever in today's business environment, marked by increasing financial uncertainty and heightened competition (Habib, Yang, & Cui, 2024; Ishak & Selamat, 2025; Kinyua & Fredrick, 2022; Vladimirova et al., 2023). In the wake of global economic disruptions, ranging from the COVID-19 pandemic to geopolitical tensions and environmental challenges, firms must maintain optimal liquidity levels to remain agile and resilient. Corporate liquidity is not only a buffer against financial shocks but also a strategic enabler that allows firms to seize investment opportunities, meet operational needs promptly, and avoid costly external borrowing (Ndruru, 2025). For firms operating in capital-intensive and risk-prone sectors, such as agriculture, liquidity is a lifeline that supports production cycles, procurement processes, inventory management, and market responsiveness. Therefore, effective liquidity management has emerged as a non-negotiable prerequisite for competitive advantage and stakeholder confidence in the modern business landscape.

Corporate liquidity directly impacts firm earnings through multiple financial and operational channels (Nam & Tuyen, 2024). Firms with strong liquidity positions are better equipped to manage day-to-day operations, settle liabilities as they fall due, and invest in revenue-generating activities without incurring the high interest costs associated with short-term debt (Ishak & Selamat, 2025). A sound liquidity posture enhances operational flexibility, reduces the risk of insolvency, and facilitates the timely procurement of inputs and services, thereby positively influencing production efficiency and output quality. However, firms suffering from liquidity constraints often resort to asset sales or expensive borrowing, both of which can erode profit margins. Moreover, inadequate liquidity can lead to missed market opportunities, delayed project implementation, and strained supplier relationships, all of which diminish overall earnings potential. In the context of agricultural firms, where working capital cycles are extended because of production lags and delayed receivables, liquidity shortages can be especially detrimental to profitability. Conversely, maintaining excessively high liquidity may also have negative consequences because idle cash holdings can signify underutilized assets that yield low returns, thereby depressing earnings (Bagana, Lateef, Ene, & Emeka, 2024). Thus, striking the right balance in liquidity management is critical for optimizing firms' earnings and ensuring financial sustainability.

Despite the theoretical and practical recognition of the importance of liquidity (Egbunike & Oranefo, 2023; Oranefo & Egbunike, 2023), the actual situation in Nigeria's agricultural sector reveals a mixed reality characterized by persistent liquidity challenges. Many listed agricultural firms in Nigeria continue to grapple with liquidity volatility driven by both internal inefficiencies and external economic pressures (Wahab, Akinola, & Dare, 2022). These firms face fluctuating cash flows due to seasonal production cycles, delayed payments from off-takers, irregular government interventions, and infrastructural inadequacies, such as poor transport and storage facilities. Additionally, agricultural firms are often marginalized in financial markets with limited access to favorable credit facilities because of perceived sectoral risks and insufficient collateral. Although some firms strive to maintain healthy liquidity positions through internal cost controls and asset optimization strategies, many still experience working capital deficiencies, inadequate cash reserves, and suboptimal liquidity ratios. These structural and financial constraints hinder their ability to efficiently manage operations, respond promptly to market changes, and make timely strategic investments, thereby affecting their ability to generate consistent and sustainable earnings.

Consequently, persistent liquidity deficiencies translate into lower earnings owing to increased operating costs, reduced production capacities, and inefficient capital utilization (Huynh, Nguyen, & Nguyen, 2025). Firms with inadequate liquidity often face operational disruptions, delayed wage payments, and compromised supply chain performance, all of which erode investor confidence and shareholder value (Ugwu, Ekwochi, & Ogbu, 2021). Second, liquidity challenges diminish firms'strategic flexibility, making it difficult for them to innovate, expand market reach, or diversify product lines, which are key factors required to thrive in today's dynamic agribusiness landscape. Moreover, prolonged periods of illiquidity may lead to credit downgrades, higher borrowing costs, and bankruptcy in extreme cases. Even when firms survive, their earnings are often characterized by volatility and unpredictability, undermining long-term financial planning and investor attraction (Isibor, Ofor, & Sunday, 2024; Lasisi, Dikki, & Okpanachi, 2017). Furthermore, the ripple effects of poor liquidity management may also extend beyond individual firms to the broader agricultural value chain, affecting farmers, distributors, retailers, and ultimately, food security in the country. These pressing consequences underscore the need for a systematic analysis of how corporate liquidity, particularly through proxies such as net working capital and cash levels, impacts firm earnings in Nigeria's agricultural sector. This finding justifies the need for further study.

1.1 Gap in Knowledge and Objective of the Study

Despite the growing interest in understanding the impact of liquidity on firm performance, existing empirical studies have largely overlooked the critical dimensions relevant to the agricultural sector in Nigeria. For instance, while Bagana et al. (2024) focus on liquidity management in consumer goods manufacturing firms, their findings are not directly applicable to the agricultural sector. Similarly, Nguyen et al. (2024) focused on Vietnamese firms and emphasized profitability and efficiency, without specific consideration for earnings after tax or sector-specific implications. Kinyua and Fredrick (2022) also examined liquidity risk in manufacturing firms in Kenya, thereby offering a limited perspective on the Nigerian agricultural context. Although Wahab et al. (2022) studied agricultural and agro-allied firms in Nigeria, their analysis did not directly assess the effect of liquidity on earnings after taxes, leaving a significant gap in the sector-specific profitability metrics. Gerio and Wahome (2020) addressed liquidity management in Kenyan agricultural firms, yet similarly failed to examine earnings after tax as a dependent variable. Lasisi et al. (2017) evaluated profitability factors in Nigerian agricultural firms but did not isolate the effect of net working capital as a proxy for liquidity. Moreover, while Samuel Kanga Odalo and Achoki (2016) and Samuel K Odalo, Achoki, and Njuguna (2016) explored liquidity-performance relationships in Kenyan agricultural firms, they emphasized broad financial performance indicators such as return on assets and return on equity, with minimal focus on net working capital or earnings after tax. These gaps reveal a lack of targeted research assessing the direct influence of corporate liquidity—particularly net working capital and cash levels —on earnings after tax in Nigeria's agricultural sector. This study seeks to fill this void by providing a more subtle and context-specific understanding of how these liquidity dimensions affect earnings in listed agricultural firms in Nigeria. Specifically, this study assesses the following:

1. Effect of net working capital on the net profit of listed agricultural firms in Nigeria.
2. Extent to which cash level affects the net profit of listed agricultural firms in Nigeria.

2. Literature review

2.1 Conceptual Review

2.1.1 Corporate Liquidity

In this context, corporate liquidity refers to a firm's ability to meet its short-term obligations using its current assets without incurring financial distress (Chika, Promise, & Werikum, 2022; Mertzanis et al., 2025; Orajekwe & Ogbodo, 2023; Waitherero, Muchina, & Macharia, 2021). Corporate liquidity entails a firm's capacity to fulfill short-term liabilities using readily available resources, thereby ensuring operational continuity. Ndruru (2025) submitted that corporate liquidity refers to the financial flexibility a firm possesses to respond promptly to cash needs, emergencies, or business opportunities. Gerio and Wahome (2020) argued that effective liquidity management helps firms remain solvent during periods of economic volatility, maintain supplier confidence, and access better credit terms. Within the liquidity

preference theory framework, firms prioritize liquidity as a form of insurance against uncertainty, particularly in sectors such as agriculture that are prone to seasonal variability and market shocks. As such, corporate liquidity is not only a financial buffer but also a strategic tool for sustaining firm earnings and ensuring long-term survival (Ishak & Selamat, 2025).

One of the most commonly used indicators of corporate liquidity is net working capital, which represents the difference between a firm's current assets and liabilities (Jędrzejczak-Gas, 2017). Net working capital reflects a firm's short-term financial health and ability to fund its operational activities. Lukic (2023) further suggests that net working capital entails a portion of a firm's current assets financed by long-term capital, highlighting its role as a cushion for day-to-day operations. Firms with adequate net working capital can efficiently manage receivables, inventories, and payables, thereby minimizing liquidity risk and enhancing their earnings capacity. From the liquidity preference standpoint, net working capital supports transactional and precautionary motives by ensuring the availability of working funds to deal with both expected and unexpected operational demands. Effective management leads to cost savings, enhanced operational efficiency, and ultimately improved earnings.

Another critical element of liquidity is the cash level, which refers to the actual amount of cash and cash equivalents available for immediate use (Bagana et al., 2024). The cash level is the total cash a firm holds to meet urgent obligations. It is the amount of liquid resources kept by firms for transactional, precautionary, and speculative purposes. Adequate cash levels allow firms to respond promptly to emerging opportunities or emergencies without resorting to costly short-term borrowing. In agricultural firms, where uncertainties such as climatic conditions, delayed harvests, and fluctuating commodity prices are prevalent, holding sufficient cash ensures the smooth operation and payment of wages, suppliers, and other critical expenses. However, liquidity preference theory also cautions against excessive cash holdings, which may lead to the underutilization of funds and reduced returns on assets. Therefore, firms must strike a balance between liquidity and profitability to optimize earnings outcomes (Nworie & Agwaramgbo, 2023; Nworie & Ofoje, 2022).

2.1.2 Firm Earnings

Firm earnings, often captured as net profit or earnings after tax, reflect the financial performance of a business over a specific period (Abu-Abbas, 2011). Firm earnings are the residual income left after deducting all expenses, taxes, and interests from total revenue. Firm earnings serve as a key measure of profitability and shareholder value, influencing investment decisions and market valuations. Earnings are the ultimate result of how effectively a firm deploys its assets, including liquid assets, to generate value (Frances and Nworie (2025). In alignment with liquidity preference theory, firms that maintain optimal liquidity are better positioned to manage their operations efficiently, take advantage of business opportunities, and avoid disruptions that may erode profit margins (Nguyen et al., 2024). Conversely, firms that either hoard liquidity excessively or suffer from inadequate liquidity may experience inefficiencies that compromise their earnings potential.

2.1.3 Nexus Between Corporate Liquidity and Firm Earnings

The relationship between corporate liquidity and firm earnings is both theoretical and empirical. Liquidity preference theory emphasizes the importance of liquidity as a safeguard against operational risks and as a facilitator of business continuity. Empirically, numerous studies such as Gerio and Wahome (2020); Lasisi et al. (2017) and Samuel K Odalo et al. (2016) have shown that firms with well-managed liquidity structures are more likely to report higher financial profitability. For agricultural firms, in particular, this relationship is even more critical because of the inherent volatility and unpredictability of the sector. The ability to maintain adequate working capital and sufficient cash reserves ensures that these firms respond flexibly to market changes, manage costs effectively, and sustain revenue-generating activities throughout the production cycle. When liquidity is optimized, firms are less reliant on external financing, face fewer disruptions in their supply chain, and are more capable of executing their strategic plans, all of which contribute positively to firm earnings (Ishak & Selamat, 2025).

2.2 Theoretical Framework

This study is anchored in Liquidity Preference Theory, originally propounded by John Maynard Keynes in 1936. The theory holds that individuals and institutions prefer to hold liquid assets because of the inherent flexibility and security they provide in uncertain environments (Ghani & Hossain, 2023). This preference for liquidity stems from three key motives: the transaction motive, which relates to meeting day-to-day operational needs; the precautionary motive, which provides a buffer against unexpected events; and the speculative motive, which allows firms to take advantage of emerging investment opportunities (Rezende, 2015). In the context of corporate finance, liquidity preference theory implies that firms must maintain an optimal level of liquid assets to sustain operations, reduce financial risks, and ensure profitability. It also provides a theoretical foundation for understanding how liquidity, measured through indicators such as net working capital and cash level, affects firm earnings.

Thus, this study adopts liquidity preference theory to explore the role of corporate liquidity in shaping the earnings performance of listed agricultural firms in Nigeria. By examining the effects of net working capital and cash level—two key indicators of liquidity—on firm earnings, this study seeks to contribute to a deeper understanding of financial performance determinants in the agricultural sector. Through this theoretical lens, this study underlines the importance of maintaining a balance between liquidity sufficiency and profitability goals to ensure sustainable earnings and long-term firm value.

2.3 Synthesis of Empirical Review

The empirical findings on the effect of corporate liquidity on the earnings of listed agricultural firms present a mix of results, demonstrating both positive and insignificant effects. Wahab et al. (2022) find that liquidity does not significantly affect financial performance among agricultural and agro-allied firms in Nigeria, contradicting other studies that report a positive relationship between liquidity and profitability. For instance, Gerio and Wahome (2020) demonstrated a significant positive relationship between liquidity management and return on assets (ROA) in agricultural firms listed on the Nairobi Securities Exchange, which aligns with findings by Samuel Kanga Odalo and Achoki (2016), who reported a significant positive relationship between liquidity and ROA and ROE. Similarly, Lasisi et al. (2017) find liquidity to be a significant driver of profitability in Nigerian agricultural firms, suggesting that liquidity plays an essential role in firm earnings in different contexts. However, the inconsistency in the findings highlights the need to consider industry-specific dynamics and economic conditions that may influence the role of liquidity in firm performance.

Studies conducted in other sectors provide further hints on the impact of liquidity on firm earnings. Bagana et al. (2024) discovered that cash and cash equivalents positively influenced financial performance in consumer goods manufacturing firms in Nigeria, whereas the cash conversion cycle exhibited a negative effect. Additionally, Kinyua and Fredrick (2022) identified asset tangibility and capital adequacy as significant predictors of financial performance in manufacturing firms, indicating that factors beyond liquidity, such as asset composition and capital structure, may play a role in determining profitability. Nguyen et al. (2024) further supported the significance of liquidity by demonstrating its strong and positive impact on profitability among Vietnam's top 100 listed companies. Collectively, these studies suggest that liquidity is crucial to firm performance. However, its influence may vary depending on factors such as industry characteristics, financial management practices, and macroeconomic conditions.

The mixed findings on the effect of corporate liquidity on the earnings of agricultural firms in Nigeria underscore the importance of firm-specific and contextual variables in financial performance analysis. While studies such as Samuel K Odalo et al. (2016) and Lasisi et al. (2017) support the argument that liquidity enhances firm earnings, the results of Wahab et al. (2022) challenge this notion, indicating that in the agricultural sector, liquidity may not be a primary driver of profitability. This discrepancy can be attributed to sectoral differences, firm size, or variations in liquidity management strategies. Moreover, findings from studies in other industries (Bagana et al., 2024; Kinyua & Fredrick, 2022; Nguyen et al., 2024) indicate that liquidity, when effectively managed, can contribute significantly to firm earnings.

Despite the growing interest in understanding the impact of liquidity on firm performance, existing empirical studies have largely overlooked the critical dimensions relevant to the agricultural sector in Nigeria. For instance, while Bagana et al. (2024) focus on liquidity management in consumer goods manufacturing firms, their findings are not directly applicable to the agricultural sector. Similarly, Nguyen et al. (2024) focused on Vietnamese firms and emphasized profitability and efficiency, without specific consideration for earnings after tax or sector-specific implications. Kinyua and Fredrick (2022) also examined liquidity risk in manufacturing firms in Kenya, thereby offering a limited perspective on the Nigerian agricultural context. Although Wahab et al. (2022) studied agricultural and agro-allied firms in Nigeria, their analysis did not directly assess the effect of liquidity on earnings after taxes, leaving a significant gap in the sector-specific profitability metrics. Gerio and Wahome (2020) addressed liquidity management in Kenyan agricultural firms, yet similarly failed to examine earnings after tax as a dependent variable. Lasisi et al. (2017) evaluated profitability factors in Nigerian agricultural firms but did not isolate the effect of net working capital as a proxy for liquidity. Moreover, while Samuel Kanga Odalo and Achoki (2016) and Samuel K Odalo et al. (2016) explored liquidity-performance relationships in Kenyan agricultural firms, they emphasized broad financial performance indicators such as return on assets and return on equity, with minimal focus on net working capital or earnings after tax. These gaps reveal a lack of targeted research assessing the direct influence of corporate liquidity—particularly net working capital and cash levels —on earnings after tax in Nigeria's agricultural sector. This study seeks to fill this void by providing a more subtle and context-specific understanding of how these liquidity dimensions affect earnings in listed agricultural firms in Nigeria.

3. Research methodology

This study adopted an ex-post facto research design, which is appropriate for investigating the relationship between corporate liquidity and firm earnings after events have already occurred. Since this study aims to examine the effects of net working capital and cash levels on the earnings of listed agricultural firms, an ex-post facto design is suitable because it allows for the analysis of pre-existing data from past events without manipulating the variables (Ikwuo, Ukoha, & Nworie, 2025). This design enables us to observe real-world financial outcomes, providing a clear view of how these liquidity factors have influenced the profitability of agricultural firms over time. The population for this study comprises all listed agricultural firms in Nigeria. As of December 31, 2023, only five agricultural firms were listed on the Nigerian Exchange Group. These firms are:

1. Ellah Lakes
2. FTN Cocoa Processor
3. Livestock Feeds
4. Okomu Oil Palm
5. Presco

Because the population elements were small and manageable, there was a need for sampling. Thus, based on the census sampling technique, all five listed agricultural firms in Nigeria, which were the original population, also became the sample size. The census technique is appropriate because it allows the study to capture data from the entire population, ensuring a comprehensive and representative analysis.

Secondary data were utilized for this study, sourced from the annual audited financial statements of the selected firms, covering the period from 2014 to 2023. The data include information on net working capital, cash levels, and net profit extracted from firms' income statements and balance sheets. Descriptive statistics were first used to summarize the data and understand the distribution and central tendencies of the variables. This was followed by a regression analysis to test the hypotheses and explore the relationship between corporate liquidity and firm earnings. Panel data regression using the Fixed Effects model was applied since the Hausman Specification Test showed that unobserved heterogeneity is significantly correlated with the explanatory variables. The hypotheses were tested at a 1% significance level. The null hypothesis was rejected if the p-value was less than 0.01. Conversely, the null hypothesis was accepted if the p-value was equal to or greater than 0.01.

Table 1 Measurement of Variables

Variables	Definition variable	Formula / measurement	Sources
Net Working Capital	The difference between a firm's current assets and current liabilities	Current Assets - Current Liabilities	Jędrzejczak-Gas (2017)
Cash Level	The amount of cash and cash equivalents held by a firm at a given point in time	Cash and Cash Equivalent / Total Assets	stockopedia.com (n.d.)
Net Profit	The residual income after deducting all operating expenses, interest, taxes, and other expenses from total revenue	Earnings After Tax	Jayathilaka (2020)

Source: Researcher's Compilation (2025)

Model Specification

To test the two null hypotheses, the study estimated the fixed effects model expressed as follows:

$$NPT_{it} = \alpha 0 + \gamma i + \beta 1 NWCit + \beta 2 CASHit + \mu it \quad \text{eqi}$$

Where:

NPT_{it} = Net profit of firm i at time t
$\alpha 0$ = Intercept
γi = Firm-specific fixed effect (captures time-invariant characteristics of each firm)
NWCit = Net working capital of firm i at time t
CASHit= Cash level of firm i at time t
μit = Error term
β_1, β_2 = Coefficients of the independent variables

4. Results and discussions

4.1 Descriptive Analysis and Model Specification Test

Table 2. Descriptive Test

	Net Profit (in thousands)	**Net Working Capital (in thousands)**	**Cash (in thousands)**
Mean	3903247.	1678698.	2079755.
Median	129317.0	47505.50	169509.0
Maximum	32413107	45430239	22253957
Minimum	-10650347	-15077217	77.00000
Std. Dev.	8115987.	7832330.	3953192.
Skewness	1.749621	3.604319	3.146297
Kurtosis	5.795987	21.28346	15.01301
Jarque-Bera	41.79633	804.6858	383.1440
Probability	0.000000	0.000000	0.000000
Observations	50	50	50

Source: Eviews 10 Output (2025)

The descriptive analysis in this study summarizes data on net profit, net working capital, and cash level. In Table 2, the descriptive statistics for **Net Profit** indicate that the average net profit across the sampled firms is approximately 3.90 billion. The maximum recorded net profit is 32.41 billion, while the minimum stands at a negative 10.65 billion, suggesting that some firms experienced substantial losses. The standard deviation of 8.12 billion signifies high variability in net profit, implying that firms in the sample have widely differing profitability levels. A skewness value of 1.75 suggests a rightward skew, meaning that the distribution of net profit is positively skewed, with a few firms earning significantly higher profits than the majority. Furthermore, the kurtosis value of 5.80, which is above the normal distribution benchmark of 3, indicates that the distribution is leptokurtic, meaning that it has heavier tails and a sharper peak. The Jarque-Bera probability is 0.000000, confirming that net profit is not normally distributed.

For Net Working Capital, the mean value is approximately 1.68 billion, indicating that firms, on average, have a positive working capital balance. The maximum value of 45.43 billion suggests that some firms have substantial liquidity, whereas the minimum value of -15.08 billion shows that other firms have negative working capital, implying liquidity constraints or potential financial distress. The standard deviation of 7.83 billion suggests high variability among firms. With a skewness of 3.60, the distribution is heavily skewed to the right, implying that a few firms hold exceptionally high working capital relative to others. The kurtosis value of 21.28 is extremely high, indicating a highly peaked distribution with heavy tails. The Jarque-Bera probability of 0.000000 suggests that net working capital does not follow a normal distribution.

Regarding Cash, the mean value of 2.08 billion implies that, on average, firms hold significant cash reserves. The maximum cash balance recorded is 22.25 billion, while the minimum is 77,000, indicating significant disparities in cash holdings among firms. The standard deviation of 3.95 billion further supports the presence of high variability in cash reserves. A skewness value of 3.15 suggests a strong positive skew, indicating that a few firms have significantly higher cash holdings than the majority. The kurtosis value of 15.01, which is much higher than the normal benchmark of 3, suggests that the distribution is highly leptokurtic with extreme outliers. The probability of the Jarque-Bera test is 0.000000, confirming that cash holdings are not normally distributed.

Table 3 Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	14.261986	2	0.0008

Source: Eviews 10 Output (2025)

The results presented in Table 3 show the outcome of the Correlated Random Effects - Hausman Test, which is used to determine whether the fixed effects or random effects model is more appropriate for panel data analysis. The test specifically evaluates whether the unique errors (unobserved individual effects) correlate with regressors. A key decision rule is that if the probability value (p-value) is less than 0.05, the null hypothesis, which favors the random effects model, is rejected in favor of the alternative hypothesis, which supports the fixed effects model. In this case, the p-value of 0.0008 was statistically significant, indicating strong evidence to reject the null hypothesis. Therefore, the result suggests that the fixed effects model is more suitable for the analysis, as the random effects would yield biased and inconsistent estimates due to the correlation between the individual effects and the explanatory variables.

4.2 Test of Hypotheses

Table 4 Fixed Effect Regression
Dependent Variable: NPT
Method: Panel Least Squares

Variable	Coefficient	Prob.
NWC	0.401114	0.0000
CASH	0.862930	0.0000
C	1435214.	0.0507
Adjusted R-squared	0.745232	
Prob(F-statistic)	0.000000	

Source: Eviews 10 Output (2025)

Table 4 presents the results of the Fixed Effect Regression model used to examine the effect of net working capital and cash level on the net profit of listed agricultural firms in Nigeria. Regarding model validity statistics, the Adjusted R-squared value of 0.745232 indicates that approximately 74.5% of the variation in net profit is explained by variations in net working capital and cash levels within the firms. This reflects the strong explanatory power of the model. Furthermore, the Prob(F-statistic) of 0.000000 confirms that the overall model is statistically significant, suggesting that the independent variables jointly have a strong effect on net profit, and that the model is valid and robust for inferences.

The constant term (C) in the model has a coefficient of ₦1,435,214 thousand (₦1.4 billion) with a probability value of 0.0507, suggesting that when both net working capital and cash are held at zero, the baseline profit level is ₦1.4 billion.

The hypotheses tested were as follows:
H01. Net working capital has no significant effect on the net profits of Nigerian listed agricultural firms.
H02. The cash level does not significantly affect the net profit of listed agricultural firms in Nigeria.
In Table 4, the coefficient of net working capital (NWC) is 0.401114, indicating that a unit increase in net working capital (in thousands) results in an estimated increase of ₦0.401 thousand (or ₦401) in net profit, assuming other variables are held constant. This suggests a positive effect of net working capital on net profit: Firms with higher working capital tend to experience improved profitability. Moreover, the probability value of 0.0000 indicates that this effect is statistically significant at the 1% level, implying strong evidence that the effect is not due to chance.

The coefficient of cash is 0.862930, which implies that for every additional unit increase in cash level (in thousands), net profit increases by approximately ₦0.863 thousand (₦863), assuming that other variables remain constant. This indicates a positive effect of cash holdings on firm profitability: firms with larger cash reserves tend to generate higher net profits. The probability value of 0.0000 also shows

that this effect is statistically significant at the 1% level, confirming its reliability in explaining variations in profitability. Hence, the alternate hypotheses were accepted: net working capital has a significant positive effect on the earnings of listed agricultural firms in Nigeria ($b = 0.401114$; $p<0.01$), and cash level has a significant positive effect on the earnings of listed agricultural firms in Nigeria ($b = 0.862930$; $p<0.01$).

4.3 Discussion of Findings

The positive and significant effect of net working capital on the earnings of listed agricultural firms in Nigeria suggests that firms with higher working capital levels experience better financial performance. This is because sufficient working capital ensures smooth day-to-day operations, allowing firms to meet short-term obligations, invest in revenue-generating activities, and effectively manage financial uncertainties. In particular, agricultural firms require significant liquidity to manage their seasonal production cycles, procurement of raw materials, and transportation costs. A strong working capital position reduces the risk of financial distress and enhances a firm's ability to invest in growth-oriented strategies, leading to improved earnings.

This finding aligns with those of several previous studies. For example, Bagana et al. (2024) find that working capital has a significant positive influence on the financial performance of consumer goods manufacturing firms in Nigeria, suggesting that firms across different sectors benefit from strong liquidity management. Similarly, Nguyen et al. (2024) confirm that liquidity positively impacts profitability in Vietnamese companies, reinforcing the importance of financial flexibility in ensuring stable earnings. Furthermore, Kinyua and Fredrick (2022) observed that asset tangibility and capital adequacy—factors closely tied to working capital—had positive and significant effects on the financial performance of manufacturing firms listed on the Nairobi Securities Exchange. Conversely, Wahab et al. (2022) report that firm liquidity does not have a significant impact on the financial performance of agricultural firms in Nigeria, which contradicts the current study's findings. However, their study focused on overall liquidity rather than net working capital, which may explain this discrepancy.

The significant positive effect of cash level on firm earnings indicates that maintaining high cash reserves enhances the financial performance of listed agricultural firms in Nigeria. This can be attributed to the fact that cash availability provides firms with the flexibility to take advantage of investment opportunities, meet unexpected financial obligations, and reduce their dependence on external financing, which often comes at high costs. In agricultural firms, cash reserves are particularly critical for managing price volatility, financing input purchases, and mitigating the risks associated with seasonal revenue fluctuations. By ensuring adequate cash levels, firms can sustain their operational efficiency and profitability.

Several studies have supported this finding. Bagana et al. (2024) find that cash and cash equivalents have a positive and significant effect on financial performance, affirming that firms with adequate cash reserves perform better financially. Similarly, Nguyen et al. (2024) demonstrate that liquidity significantly enhances profitability in Vietnamese firms, emphasizing the importance of cash flow management. Gerio and Wahome (2020) also reported a strong positive relationship between liquidity management and return on assets in agricultural firms, reinforcing the idea that maintaining sufficient cash reserves contributes to financial success. Additionally, Samuel Kanga Odalo and Achoki (2016) find a significant positive relationship between liquidity and financial performance in agricultural firms listed on the Nairobi Securities Exchange, further supporting the argument that cash levels are a crucial determinant of firm earnings. However, Wahab et al. (2022) contradict this finding by concluding that firm liquidity has no significant impact on financial performance in Nigerian agricultural firms. Differences in research methodologies, timeframes, and liquidity measures may account for these inconsistencies.

5. Conclusion

As both net working capital and cash levels have significant positive effects on earnings, firms with higher liquidity are better positioned to support their operational activities, manage working capital

more efficiently, and invest in growth opportunities. Theoretically, the ability to maintain substantial liquidity ensures that firms can meet their short-term financial obligations while also financing their day-to-day operations. This ability to remain financially flexible may allow agricultural firms to navigate the unique challenges they face, such as seasonal fluctuations, supply chain disruptions, and shifts in commodity prices, ultimately contributing to more stable and sustainable earnings.

Thus, maintaining healthy liquidity levels provides firms with a financial cushion that helps mitigate operational risks and allows for continued investment in capital projects, new technologies, and market expansion. In other words, liquidity is not merely a passive financial buffer but a critical tool for performance enhancement. In conclusion, firms that can optimize their liquidity positions are more agile in taking advantage of business opportunities, such as acquiring raw materials at favorable prices or capitalizing on market demand surges. This strategic use of liquidity can result in increased profitability and sustained growth, making it a key factor in the long-term financial success of Nigerian agricultural firms.

The study recommends the following:

1. Financial managers of listed agricultural firms in Nigeria should adopt proactive working capital management strategies by optimizing inventory levels, ensuring the efficient collection of accounts receivable, and maintaining a balanced accounts payable structure. This enhances liquidity, while supporting continuous business operations and profitability.
2. Executives of listed agricultural firms in Nigeria should prioritize maintaining robust cash reserves to effectively manage operational costs and investment opportunities. By ensuring sufficient cash levels, firms can reduce the risk of liquidity shortages and improve their overall profitability.

5.1 Contribution to Knowledge

This study makes a significant contribution to the literature by addressing key gaps in the understanding of the impact of liquidity on firm performance, particularly in the context of Nigeria's agricultural sector. While previous research has explored liquidity management in other sectors, such as consumer goods manufacturing (Bagana et al., 2024), or in different geographic regions, such as Vietnam and Kenya (Kinyua & Fredrick, 2022; Nguyen et al., 2024), these studies fail to consider the specific implications for earnings after tax or sector-specific performance indicators within the agricultural industry. Notably, earlier work in Nigeria (Lasisi et al., 2017; Wahab et al., 2022) overlooked the direct relationship between liquidity, as measured by net working capital and cash levels, and earnings after tax. By isolating net working capital as a liquidity proxy, this study provides a more targeted analysis of how liquidity directly influences earnings after tax in listed agricultural firms in Nigeria. This nuanced approach contributes to a deeper, context-specific understanding of liquidity's role in profitability within the agricultural sector, enriching the existing body of knowledge on liquidity-performance relationships.

5.2 Limitations of the Study and Suggestion for Further Studies

A limitation of this study is its relatively small sample size, as it focused only on listed agricultural firms in Nigeria, which limits the ability to generalize the findings to the entire agricultural sector, since unlisted agricultural businesses were not part of the sample size. Additionally, relying on only two liquidity proxies—net working capital and cash level—might also restrict a fuller understanding of how liquidity impacts firm earnings. Future research should consider a larger and more diverse sample, including unlisted agricultural firms and agro-allied businesses from various regions. It could also explore additional liquidity measures, such as the current ratio, quick ratio, and cash conversion cycle, and incorporate mixed-method approaches to gain a more comprehensive understanding of the factors that influence liquidity and performance in the agricultural sector.

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