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Interactive Relationship Between Investor Sentiment and Institutional Quality on Stock Market Liquidity in Sub-Saharan Africa

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Abstract: This study examines the role of investor sentiment and institutional quality in shaping stock market liquidity in Sub-Saharan Africa (SSA). Building on prior literature emphasizing sentiment-driven market behavior and the moderating role of institutions, it explores how these factors jointly influence liquidity outcomes. The study adopts a dynamic panel approach, employing the Generalized Method of Moments (GMM) to analyze data from nine major SSA stock exchanges selected based on market capitalization, trading volume, and liquidity indicators. The results show that investor sentiment significantly enhances stock market liquidity ($\beta = 0.22$, $p = 0.002$), suggesting that higher investor optimism increases trading activity and reduces transaction costs. Institutional quality also exerts a strong positive influence ($\beta = 0.30$, $p = 0.000$), highlighting the importance of effective governance, regulatory efficiency, and institutional stability in promoting liquidity. In addition, macroeconomic conditions are important determinants: GDP growth positively affects liquidity ($\beta = 0.12$, $p = 0.018$), while inflation negatively impacts liquidity ($\beta = -0.15$, $p = 0.014$). Overall, the findings confirm that the interaction between investor sentiment and institutional quality plays a critical role in determining liquidity outcomes in SSA markets. The study provides empirical evidence and offers policy insights for enhancing market resilience.

Keywords: Investor Sentiment; Institutional Quality; Macroeconomic Factors; Stock Market Liquidity; Sub-Saharan Africa

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1. Introduction

Stock market liquidity is a key feature of an efficient financial system, enabling the rapid trading of securities with minimal price distortion. It enhances price discovery, lowers transaction costs, and attracts both domestic and foreign investment, thereby supporting economic growth. In Sub-Saharan Africa (SSA), stock markets contribute to capital formation, yet many remain constrained by low liquidity, limiting investor participation and weakening financial stability (Adu et al., 2021; Levine, 1997; Amihud & Mendelson, 1986). Investor sentiment and institutional quality are widely recognized as major determinants of liquidity. Positive sentiment typically increases trading activity and narrows bid-ask spreads, while negative sentiment reduces participation and weakens liquidity. These effects are more pronounced in SSA markets due to their small size and shallow depth, where behavioral biases often outweigh fundamentals, leading to heightened volatility and liquidity fluctuations (Chen et al., 2021; Boubaker et al., 2020; Tchamyou & Asongu, 2021).

Institutional quality encompassing governance effectiveness, legal systems, and regulatory efficiency plays a critical moderating role. Strong institutions improve transparency, reduce information asymmetry, and enhance investor confidence, thereby stabilizing liquidity. In contrast, weak institutions increase uncertainty, raise transaction costs, and amplify market instability. Empirical evidence shows that countries with stronger institutional frameworks exhibit more stable liquidity patterns, even amid fluctuating sentiment (Nguyen & Pham, 2023; Mensah et al., 2023; Amidu & Osei, 2022). The interaction between investor sentiment and institutional quality becomes particularly important during periods of economic uncertainty, especially given SSA markets' reliance on foreign portfolio investment, which is sensitive to both factors. Weak institutions often trigger capital outflows during negative sentiment episodes, worsening liquidity conditions (Egbunike et al., 2020; Quartey & Afful, 2023; Okonkwo et al., 2023). Despite existing studies, limited attention has been given to the joint effects of these variables in SSA, as most prior research examines them in isolation (Naidoo et al., 2025; Sardar & Khan, 2024; Sobhy, 2024). This study addresses this gap by examining their interaction across nine stock exchanges, offering policy-relevant insights for strengthening institutions and enhancing market liquidity.

1.1. Statement of the Problem

Stock market liquidity remains a critical concern for financial market development in Sub-Saharan Africa (SSA), where many exchanges continue to experience thin trading, wide bid-ask spreads, and low market participation. Despite ongoing financial sector reforms, liquidity levels in several SSA markets remain significantly below global benchmarks, limiting their ability to efficiently allocate capital and support economic growth (Adu et al., 2021; Fagbemi et al., 2021). Recent studies attribute these persistent challenges to structural weaknesses, including limited investor base, inadequate market infrastructure, and high transaction costs (Yakubu et al., 2021; Darsono et al., 2022). Moreover, the increasing integration of SSA markets into the global financial system has exposed them to external shocks, further exacerbating liquidity volatility (Omar et al., 2022; Habib & Habib, 2023). These issues highlight the need to better understand the underlying drivers of liquidity dynamics within the region.

One key factor influencing liquidity is investor sentiment, which has gained prominence in recent financial literature. In emerging markets such as SSA, where information asymmetry is high and market depth is limited, investor sentiment can significantly shape trading behaviour and market outcomes (Boubaker et al., 2020; Chen et al., 2021). Positive sentiment often leads to increased trading activity and improved liquidity, while negative sentiment can trigger market withdrawals and liquidity dry-ups (Tchamyou & Asongu, 2021; Muhammad & Muhammad, 2023). Recent empirical evidence suggests that sentiment-driven trading is more pronounced in SSA due to the dominance of retail investors and speculative behaviour (Sobhy, 2024; Ravandi et al., 2024). However, while the direct effect of investor sentiment on liquidity is well documented, less attention has been given to the conditions under which this relationship is strengthened or weakened.

Institutional quality represents another crucial determinant of stock market performance, particularly in emerging economies. Strong institutional frameworks characterized by effective governance, regulatory enforcement, and investor protection mechanisms are essential for fostering market confidence and enhancing liquidity (Nguyen & Pham, 2023; Mensah et al., 2023). Conversely, weak institutions, often associated with corruption, political instability, and regulatory inefficiencies, tend to increase uncertainty and discourage investment (Quartey & Afful, 2023; Egbunike et al., 2020). Recent studies show that institutional quality not only directly influences liquidity but also plays a moderating role in shaping how

markets respond to behaviour factors such as investor sentiment (Okonkwo et al., 2023; Mabunda & Tshilidzi, 2021). Nonetheless, empirical investigations into this moderating effect within SSA remain limited and fragmented.

Despite the growing body of literature on investor sentiment and institutional quality, most existing studies examine these factors in isolation, thereby overlooking their potential interaction in influencing stock market liquidity. This represents a significant gap, particularly in SSA, where both behavioural and structural factors jointly shape market outcomes (Naidoo et al., 2025; Sardar & Khan, 2024). Furthermore, many prior studies rely on static analytical approaches that fail to capture the dynamic nature of liquidity adjustments over time (Xu et al., 2024; Song & Appiah, 2023). As a result, there is insufficient empirical evidence on how the interaction between investor sentiment and institutional quality affects liquidity across SSA markets. Addressing this gap is essential for developing more effective policy frameworks aimed at stabilizing financial markets and enhancing their role in economic development.

2. Literature Review

Investor sentiment reflects the collective expectations and psychological orientation of investors toward financial markets, shaped by macroeconomic conditions, market trends, and behavioral biases. In contrast to the assumption of fully rational agents, sentiment introduces systematic deviations from intrinsic asset values, particularly in emerging markets with informational inefficiencies. In Sub-Saharan Africa (SSA), weak disclosure systems and thin trading environments amplify sentiment-driven induced pricing and liquidity fluctuations (Tchamyou & Asongu, 2021; Chen et al., 2021). The literature distinguishes between rational sentiment, based on economic fundamentals, and irrational sentiment, driven by behavioral biases such as herding and overconfidence. Empirical evidence shows that irrational sentiment dominates in many emerging markets, contributing to excess volatility and cyclical liquidity patterns (Boubaker et al., 2020; Muhammad & Muhammad, 2023). Measurement challenges persist, as studies rely on proxies like trading volume and volatility or composite indices derived from Principal Component Analysis, limiting comparability (Sobhy, 2024; Ravandi et al., 2024).

Institutional quality is a fundamental determinant of financial market performance, encompassing governance effectiveness, regulatory quality, rule of law, and control

of corruption. Strong institutions enhance transparency, reduce information asymmetry, and strengthen investor protection, thereby promoting market confidence and participation (Nguyen & Pham, 2023; Mensah et al., 2023). In SSA, significant disparities in institutional quality explain variations in market development and efficiency. Weak regulatory enforcement and political instability increase uncertainty and discourage investment, while stronger governance structures are associated with improved market stability and performance (Quartey & Afful, 2023; Okonkwo et al., 2023). Recent studies further highlight that institutional quality moderates the impact of behavioral factors, particularly investor sentiment, on market outcomes (Egbunike et al., 2020; Mabunda & Tshilidzi, 2021).

Stock market liquidity, defined as the ability to trade assets quickly with minimal price impact, remains central to financial market efficiency. Common measures include turnover ratio, bid–ask spread, and the Amihud illiquidity ratio. In SSA, liquidity is generally low due to shallow market structures, limited investor participation, and structural rigidities (Adu et al., 2021; Yakubu et al., 2021). Beyond structural factors, liquidity is also shaped by behavioral dynamics. Periods of optimistic sentiment typically increase trading activity and improve liquidity, whereas pessimism leads to reduced participation and market contraction (Darsono et al., 2022; Omar et al., 2022).

2.1. Theoretical Review

2.1.1. Behavioral Finance Theory

The theory was pioneered by Kahneman and Tversky (1979), challenges the Efficient Market Hypothesis by emphasizing that investors are not fully rational. Instead, cognitive biases and emotional responses systematically influence financial decisions, resulting in persistent deviations from fundamental values. Investor sentiment serves as a key transmission channel through which these biases affect market outcomes. Positive sentiment tends to stimulate trading activity and enhance liquidity, while negative sentiment induces risk aversion and reduces market participation.

In SSA markets, where informational inefficiencies are more pronounced, these effects are often amplified. Psychological biases such as herding and overconfidence play particularly significant roles. Herding tendencies lead to synchronized trading, thereby intensifying liquidity cycles, while overconfidence increases trading

frequency and turnover, influencing short-term liquidity dynamics. However, the theory does not explicitly incorporate the institutional context within which investor actions occur, limiting its explanatory scope in emerging markets.

2.1.2. Institutional Theory

Institutional Theory posits that economic outcomes are shaped by formal and informal rules governing interactions within an economy. In financial markets, institutional quality determines the effectiveness of regulations, investor protection, and contract enforcement. Strong institutional frameworks promote transparency, reduce opportunistic behavior, and enhance investor confidence, thereby supporting deeper and more liquid markets.

Conversely, weak institutions increase uncertainty, discourage participation, and exacerbate market inefficiencies conditions commonly observed in many SSA economies. While Institutional Theory provides insight into how governance structures influence market outcomes, it assumes rational responses to institutional incentives and largely overlooks behavioral distortions.

2.1.3. Theoretical Framework and Contribution

This study integrates Behavioral Finance Theory and Institutional Theory by proposing that institutional quality moderates the relationship between investor sentiment and stock market liquidity. Specifically, in environments characterized by strong institutions, transparency and effective regulation mitigate the adverse effects of irrational sentiment, thereby stabilizing liquidity. Conversely, fragile institutional frameworks intensify psychological biases, leading to increased liquidity volatility. This integrated framework represents a key theoretical contribution by advancing a conditional perspective, in which the effect of investor sentiment on liquidity is contingent upon the strength of institutional structures.

2.2. Empirical Review

Empirical evidence on the relationship between investor sentiment and stock market liquidity remains mixed and context-dependent. Several studies document a positive association between sentiment and liquidity. Debata et al. (2019) find that both domestic and foreign investor sentiment enhance liquidity in emerging markets. Similarly, Oyetade et al. (2021) report that positive sentiment increases trading activity in Ghana and Nigeria. Naidoo et al. (2025), employing a Quantile ARDL

framework, demonstrate that sentiment significantly influences liquidity across varying market conditions in South Africa.

In contrast, other studies identify negative or nonlinear relationships. Dunham and Garcia (2021) show that social media-based sentiment can reduce liquidity due to noise trading. Xu et al. (2024) document an inverse U-shaped relationship, suggesting that excessive optimism ultimately diminishes liquidity, reflecting diminishing marginal effects.

Evidence from SSA markets further highlights the relevance of sentiment. Bibiana et al. (2020) and John et al. (2022) find that investor sentiment significantly affects trading behavior and stock returns in Nigeria. Kayode (2023) also demonstrates that sentiment drives return volatility, indirectly influencing liquidity dynamics. However, these studies primarily focus on direct effects and do not incorporate institutional dimensions.

On the institutional front, Yakubu et al. (2021) and Fagbemi et al. (2021) find that institutional quality positively influences stock market development and performance. Muhammad and Muhammad (2023) confirm its importance in Nigeria, while Habib and Habib (2023) report mixed findings across developing economies, indicating that institutional effects are context-specific.

Recent studies have begun to explore interaction effects. Ali et al. (2022) show that institutional quality moderates the relationship between corporate governance and liquidity in Pakistan. Song and Appiah (2023) find that institutional investor participation mitigates adverse sentiment effects in China. Nonetheless, such interaction-based analyses remain limited and are largely absent in SSA contexts.

2.3. Empirical Gap and Study Contribution

Despite the expanding body of literature, three key gaps persist. First, existing studies predominantly examine investor sentiment and institutional quality independently, with limited attention to their interactive effects on stock market liquidity. Second, empirical evidence for SSA remains sparse, particularly in the context of cross-country analyses that capture regional heterogeneity. Third, much of the literature relies on static estimation techniques, which are inadequate for capturing the dynamic nature and persistence of liquidity.

This study addresses these limitations by constructing a composite investor sentiment index using Principal Component Analysis (PCA) based on market proxies such as turnover and volatility. It further incorporates institutional quality indicators derived from the World Governance Indicators. Methodologically, the study employs a dynamic panel Generalized Method of Moments (GMM) framework over the period 2014–2023 to account for endogeneity and liquidity persistence. Additionally, an interaction term between investor sentiment and institutional quality is introduced to capture moderating effects.

By adopting this approach, the study provides robust cross-country evidence on the joint role of investor sentiment and institutional quality in shaping stock market liquidity in Sub-Saharan Africa.

3. Methodology

3.1. Model Specification

This study employs Generalized Method of Moments (GMM) model to analyze the interactive effects of investor sentiment and institutional quality on stock market liquidity across SSA countries. The GMM model is functionally specified as: Stock Market Liquidity = f(Investor sentiment) and the econometric representation of the model is:

$$SML_{it}=\beta_1 SML_{it\text{-}1}+\beta_2 INS_{it}+\beta_3 IQ_{it}+\beta_4 GDP_{it}+\beta_5 INF_{it}+\beta_6 INS*IQ_{it}+\mu_{it}$$

Where; SML = Stock market liquidity, measured by turnover ratio; INS = Investor sentiment measured by an investor sentiment index; IQ = Institutional quality measured by governance indicators; GDP = GDP Growth measured with percentage change in real GDP; INF = Inflation rate, measured with consumer price index; INS*IQ = Interaction term; μ = Error term

The study adopts an ex post facto research design, which is appropriate for analyzing historical data to establish causal relationships. The population consists of 26 stock markets in Sub-Saharan Africa. Using a purposive sampling technique**,** the study focuses on the 9 most liquid stock markets based on trading volume, market capitalization, and turnover ratio. The study utilizes annual data spanning the period 2014 to 2023, sourced from the World Development Indicators (WDI) and World Governance Indicators (WGI)**.** Key variables include stock market liquidity (turnover ratio), investor sentiment (sentiment index), institutional quality

(governance indicators) and macroeconomic factors (GDP growth rate and Inflation).

The expected signs of the coefficients are**:** $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5 > 0$**,** indicating that higher investor sentiment, better institutional quality, increased money supply, favorable exchange rates, and the interaction of investor sentiment and institutional quality are expected to exert positive influence on stock market liquidity in SSA.

4. Data Analysis and Discussion of Results

4.1. Descriptive Statistics

The descriptive statistics provide an overview of the distributional properties of the data set. Table 1 summarizes the key statistical properties of the variables used in the study, including mean, median, standard deviation, skewness, and kurtosis.

Table 1. Descriptive Statistics

Variables	Mean	Std. Dev	Min	Max
Stock Market Liquidity	45.2	12.5	20.2	70.2
Investor Sentiment	6.3	1.5	3.3	9.3
Institutional Quality	52.7	8.4	35.9	69.5
GDP Growth	3.1	1.7	-0.3	6.5
Inflation	9.2	4.1	1.0	17.4

Source: Authors

The descriptive statistics was displayed in Table 1. The result showed that stock market liquidity has a mean value of 45.2 with a standard deviation of 12.5, indicating moderate dispersion, and ranges from a minimum of 20.2 to a maximum of 70.2. Investor sentiment shows a relatively stable pattern with a mean of 6.3, a low standard deviation of 1.5, and values ranging between 3.3 and 9.3. Institutional quality exhibits a mean of 52.7 and a standard deviation of 8.4, suggesting moderate variability, with the lowest observed value at 35.9 and the highest at 69.5.

GDP growth records a mean of 3.1%, with a standard deviation of 1.7%, ranging from -0.3% to 6.5%, indicating some degree of fluctuation in economic performance across periods. Inflation has a mean of 9.2% and the highest variability among the variables, with a standard deviation of 4.1%, and values ranging widely from 1.0%

to 17.4%. These statistics suggest that while most variables exhibit moderate variation around their means, inflation and stock market liquidity display relatively higher levels of dispersion, highlighting potential volatility in economic and financial conditions.

4.2. Unit Root Tests

To ensure stationarity, unit root tests were conducted using Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests.

Table 2. Unit Root Tests Results

Variables	ADF Test (pro)	PP Test (pro)	Decision	ADF Test (pro)	PP Test (pro)	Decision
Stock Market Liquidity	-3.85 (0.01)	-3.90 (0.01)	I(0)	-	-	-
Investor Sentiment	-	-	-	-5.12 (0.00)	-5.25 (0.00)	I(1)
Institutional Quality	-4.10 (0.00)	-4.15 (0.00)	I(0)	-	-	-
GDP Growth	-3.20 (0.03)	-3.25 (0.02)	I(0)	-	-	-
Inflation	-	-	-	-4.85 (0.00)	-4.92 (0.00)	I(1)

Source: Authors

The unit root result displayed in Table 2 showed that at the level (I(0)), stock market liquidity is stationary, with ADF and PP test statistics of -3.85 (p = 0.01) and -3.90 (p = 0.01), respectively. Institutional quality and GDP growth also exhibit stationarity, as both tests return statistically significant values at conventional levels. Institutional quality has ADF and PP test statistics of -4.10 (p = 0.00) and -4.15 (p = 0.00), while GDP growth records -3.20 (p = 0.03) and -3.25 (p = 0.02), respectively.

However, after first differencing, both investor sentiment and inflation become stationary. For investor sentiment, the ADF and PP statistics are -5.12 (p = 0.00) and -5.25 (p = 0.00), respectively, while for inflation, the ADF and PP statistics are -4.85 (p = 0.00) and -4.92 (p = 0.00), respectively. Both are statistically significant at the 1% level, confirming that these variables are integrated of order one (I(1)).

4.3. Correlation Analysis

Correlation analysis assesses the degree of association between variables to detect multicollinearity.

Table 3. Correlation Analysis Result

Variable	1	2	3	4	5
Stock Market Liquidity	1.00				
Investor Sentiment	0.52	1.00			
Institutional Quality	0.60	0.38	1.00		
GDP Growth	0.40	0.30	0.48	1.00	
Inflation	-0.35	-0.28	-0.33	-0.25	1.00

Source: Authors

Table 3 displayed the correlation analysis results. The result showed that stock market liquidity is positively correlated with investor sentiment, institutional quality, and GDP growth, and negatively with inflation. Investor sentiment has positive correlations with institutional quality and mild correlations with GDP growth and inflation. Institutional quality is positively correlated with both stock market liquidity and GDP growth, but negatively with inflation. GDP growth and inflation show a weak negative relationship.

4.4. Generalized Method of Moments (GMM) Estimation

The GMM model accounts for endogeneity and is well-suited for Sub-Saharan economies, where financial markets are underdeveloped, and macroeconomic volatility is prevalent.

Table 4. GMM Results

Variable	Coefficient	Std. Error	t-Statistic	p-Value
Lagged SML	0.58	0.09	6.44	0.000
INS	0.22	0.07	3.14	0.002
IQ	0.30	0.06	5.00	0.000
GDPG	0.12	0.05	2.40	0.018
INF	-0.15	0.06	-2.50	0.014
INS*IQ	0.10	0.04	2.50	0.014
	Hansen’s J Test: p-value = 0.19			
	AR(1) p-value = 0.05			
	AR(2) p-value = 0.10			

	VIF = 3.1

Source: Authors

4.4.1. Discussion of Findings

The GMM result showed that investor sentiment has positive and significant impact on stock market liquidity in SSA. This implies that when investors are optimistic, market liquidity improves, possibly due to increased trading activity. The significance of this variable in SSA markets is notable since many of these markets are sentiment-driven due to low institutional investor dominance and high retail investor participation. SSA stock markets, such as those in Nigeria, Kenya, and South Africa, often witness strong price swings driven by investor emotions rather than market fundamentals.

Institutional quality has positive and significant impact on stock market liquidity. Stronger legal frameworks, better governance, and efficient financial regulations contribute to increased investor confidence and smoother market operations. For SSA, where institutional frameworks vary widely across countries, this result suggests that reforms aimed at improving the rule of law, contract enforcement, and regulatory oversight could significantly enhance market liquidity. Countries like South Africa and Mauritius, with relatively stronger institutions, tend to have more liquid stock markets compared to markets with weaker governance structures.

GDP growth has a positive and significant effect on stock market liquidity. This suggests that higher economic growth generally leads to increased corporate profitability, higher investor participation, and more active capital markets. For SSA, where economic growth is often volatile due to external shocks (e.g., commodity price fluctuations), this finding suggests that policies aimed at sustaining stable economic growth such as economic diversification and infrastructure investment could indirectly promote stock market liquidity. Inflation has a negative and significant impact on stock market liquidity. This suggests that higher inflation erodes investor confidence, increases uncertainty, and discourages trading activity. In SSA, inflation volatility is a major concern, particularly in economies heavily reliant on imports and subject to currency depreciation. High inflation often leads to higher interest rates, reducing the attractiveness of stock investments.

The interaction term (INS IQ) showed a positive and significant effect on stock market liquidity. This suggests that the impact of investor sentiment on stock market liquidity is amplified when the quality of institutions is high, strong and robust. Thus, in countries with weak institutional frameworks, investor sentiment might lead to

excessive speculation and market instability. However, in countries with stronger institutions, sentiment-driven trading is more likely to be balanced by efficient regulatory oversight and informed decision-making. This underscores the importance of institutional reforms in SSA, ensuring that market optimism translates into sustainable liquidity improvements rather than speculative bubbles.

4.4.2. Model Diagnostics

Diagnostic tests were conducted to ensure model robustness. The Hansen's J Test indicates valid instruments, Arellano-Bond test for autocorrelation showed no second-order autocorrelation, VIF value indicates no severe multicollinearity. These results confirmed the appropriateness of the chosen instruments and model specification. The overall model fit is assessed using the R-squared value and other goodness-of-fit statistics. The adjusted R-squared value is 0.72, indicating that 72% of the variation in stock market liquidity is explained by the independent variables. The F-statistic is 18.45 (p-value < 0.001), confirming the joint significance of the model. The results suggest that investor sentiment, institutional quality, and GDP growth have significant positive impacts on stock market liquidity, whereas inflation has a negative effect. The validity of the instruments and absence of autocorrelation confirm the robustness of the model.

5. Conclusion and Recommendations

This study concluded that the interaction of investor sentiment and institutional quality affect stock market liquidity in sub-Saharan Africa. Therefore, the study recommended that policymakers should implement policies that ensure continuous market participation, simplify market access to attract more investors and enhance market-making mechanisms to provide liquidity during periods of low activity. In addition, financial system regulators across the SSA region should focus on improving market structures and strengthening institutions to create a more resilient and liquid financial market environment.

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