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Editorial

Journal of Economics and Behavioral Studies (JEBS) provides distinct avenue for quality research in the everchanging fields of economics & behavioral studies and related disciplines. Research work submitted for publication consideration should not merely limited to conceptualization of economics and behavioral developments but comprise interdisciplinary and multi-facet approaches to economics and behavioral theories and practices as well as general transformations in the fields. Scope of the JEBS includes: subjects of managerial economics, financial economics, development economics, finance, economics, financial psychology, strategic management, organizational behavior, human behavior, marketing, human resource management and behavioral finance. Author(s) should declare that work submitted to the journal is original, not under consideration for publication by another journal and that all listed authors approve its submission to JEBS. Author (s) can submit: Research Paper, Conceptual Paper, Case Studies and Book Review. Journal received research submissions related to all aspects of major themes and tracks. All submitted papers were first assessed by the editorial team for relevance and originality of the work and blindly peer-reviewed by the external reviewers depending on the subject matter of the paper. After the rigorous peer-review process, the submitted papers were selected based on originality, significance and clarity of the purpose. The current issue of JEBS comprises papers of scholars from Uganda, South Africa and Malaysia. Influence of Macroeconomic Factors and Financial Development on Interest Rate Spreads, Understanding the Dynamics Between Monetary Policy and Interest Rate Spreads, Relationship between Internship Experience and Future Career Prospects, Financial Innovations and Profitability of Commercial Banks, Quantifying Fiscal Multipliers: A Structural Var Approach, Budgetary Control, Managerial Competencies and Performance of Higher Local Governments, Corporate Governance Practices, Operating Environment and Financial Sustainability, Entrepreneurial Networking and Performance of Manufacturing SMEs and e-Shopping Behavior: An Empirical Study of Malaysian Consumers were some of the major practices and concepts examined in these studies. The current issue will therefore be a unique offer where scholars will be able to appreciate the latest results in their field of expertise and to acquire additional knowledge in other relevant fields.

Editor In Chief

Ijaz Ur Rehman Ph.D

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Intersecting Dynamics: The Influence of Macroeconomic Factors and Financial Development on Interest Rate Spreads in Uganda

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Abstract: The study investigates the factors influencing interest rate spreads in Uganda's banking sector, focusing on inflation, GDP, Real Effective Exchange Rate (REER), private sector credit, and financial development. Using an Autoregressive Distributed Lag (ARDL) model on data from 2001 to 2022, it examines short and long-term dynamics between these variables and interest rate spreads, within the liquidity preference theory framework. In the short run, inflation and GDP have marginally significant positive impacts on interest rate spreads, indicating that initial increases may widen spreads due to heightened liquidity demand and economic activity. Conversely, in the long run, these factors exhibit significant negative effects, suggesting a stabilizing influence of monetary policy and increased market efficiency. The REER's short-term impact reflects currency value fluctuations affecting risk premium adjustments, which diminish in the long run as markets adapt. The study also explores the interaction between inflation and financial development, represented by private sector credit, on interest rate spreads. Short-term results show a non-significant negative moderation by financial development, while long-term analysis suggests a potential amplification of inflation's effects as the financial sector matures, requiring nuanced financial development policies. Policy recommendations stress the importance of stabilizing inflation and exchange rates to control interest rate spreads in the short term. Long-term strategies include enhancing banking sector efficiency and promoting competitive practices to mitigate the negative effects of economic growth on interest rate spreads.

Keywords: *Macroeconomic factors, financial development, interest rate spreads and Uganda.*

1. Background

Interest rate spreads hold paramount importance within the banking sector, serving as a pivotal metric for evaluating the profitability and stability of financial institutions (Jefferis et al., 2020). These spreads, defined as the variance between the interest rates charged on loans and those paid on deposits, directly influence a bank's net interest income and overall financial performance (Chatziantoniou et al., 2021). Their widening often signifies increased profitability for banks, while narrowing spreads may signal challenges such as heightened credit risk or intensified market competition (de Ferra & Mallucci, 2022). Globally, interest rate spreads exhibit significant variability among nations, influenced by a myriad of factors including economic conditions, monetary policies, regulatory frameworks, and market dynamics (Kwak, 2024). For instance, recent statistics highlight Argentina's remarkable position with the highest interest rate spread globally, boasting an official rate of 133% (Filiz et al., 2022). This exorbitant spread reflects the economic tribulations faced by the nation, including persistent inflation, currency instability, and fiscal imbalances, which have engendered substantial risk premiums within its financial system (Lilian et al., 2022).

Zooming into the African context, Zimbabwe emerges as the African nation with the highest interest rates, following closely behind Argentina in global rankings (Matenda et al., 2022). The banking sector in Zimbabwe grapples with profound challenges stemming from a tumultuous history of economic instability, hyperinflation, and currency devaluation (Matenda et al., 2022). These adversities have contributed to the prevalence of soaring interest rates, with financial institutions imposing significant spreads to offset risks associated with lending (Matenda et al., 2022). Such elevated interest rates not only discourage borrowing but also impede efforts toward economic growth and financial inclusion (Matenda et al., 2022). Conversely, Uganda presents a divergent narrative within the African landscape (Nabende et al., 2020). While interest rates remain comparatively lower than those of Zimbabwe and Argentina, Uganda's banking sector confronts notable hurdles in effectively managing interest rate spreads (Nabende et al., 2020). Despite efforts by the Bank of Uganda to maintain a stable macroeconomic environment, interest rate spreads in the country exhibit volatility.

Influenced by factors such as inflation, GDP growth, exchange rate fluctuations, and credit market dynamics (Nabende et al., 2020). In Uganda, the interaction between macroeconomic factors and financial development plays a pivotal role in shaping interest rate spreads within the banking sector (Nabende et al., 2020). Inflation, as a primary determinant, wields considerable influence on interest rate spreads by impacting the cost of funds and borrowers' repayment capacity (Owusu-Ankamah & Sakyi, 2021). Similarly, fluctuations in GDP growth rates influence banks' lending behaviors and risk-taking tendencies, thereby affecting the spread between lending and deposit rates (Owusu-Ankamah & Sakyi, 2021). The Real Effective Exchange Rate (REER) also assumes a critical role, reflecting the competitiveness of Uganda's exports and imports and influencing banks' pricing decisions (Owusu-Ankamah & Sakyi, 2021). Moreover, private sector credit, serving as a barometer of financial development, moderates the relationship between inflation and interest rate spreads, underscoring the significance of credit market dynamics in shaping borrowing costs (Shrestha, 2022). This paper endeavors to delve into the intricate interplay of these factors and their collective ramifications on interest rate spreads in Uganda's banking sector (Nabende et al., 2020). By furnishing empirical insights and policy implications, this study seeks to enlighten policymakers, regulators, and market participants on strategies to bolster financial stability, enhance credit accessibility, and foster sustainable economic expansion in Uganda (Nabende et al., 2020; Gitiri, 2022).

2. Literature Review

Theoretical Underpinning: The Liquidity Preference Theory, pioneered by John Maynard Keynes, serves as the cornerstone for understanding the interplay between macroeconomic factors, financial development, and interest rate spreads in Uganda. This theory posits that individuals and businesses' preferences for holding liquid assets, driven by transactional, precautionary, and speculative motives, determine the equilibrium interest rate. At its core, the theory suggests that interest rates adjust to achieve a balance between the demand for readily available money and the central bank's control over the money supply. As macroeconomic conditions and the level of financial development fluctuate, they influence these liquidity preferences, which in turn translate into adjustments in lending and deposit rates by banks, ultimately reflected in the interest rate spread. Within this theoretical framework, the study's dependent variable, Interest Rate Spread (SPREAD), directly reflects the level of liquidity preference in the Ugandan economy. Factors such as inflation (INFL) and GDP growth rate influence the demand for money for transactional and precautionary purposes, potentially leading to a wider spread as banks adjust interest rates to maintain profitability in a dynamic economic environment.

Furthermore, the Real Effective Exchange Rate (REER) and External Debt Stock (EXTDEBT) influence external financial stability and competitiveness, impacting liquidity preferences through capital flows and risk assessments, and consequently, the interest rate spread. Additionally, the interaction of inflation with Private Sector Credit (PSC) adds a layer of density to the analysis. This interaction allows the study to explore how financial development might modulate the effects of inflation on liquidity preference and, ultimately, on the interest rate spread. Therefore, the Liquidity Preference Theory offers a robust framework for analyzing the intricate relationship between macroeconomic indicators, the development of the financial sector, and the behavior of the banking sector in Uganda. By examining how changes in economic growth, inflation, external debt, and the availability of credit influence liquidity preferences and the demand for money, this theory aids in unraveling the intricate mechanisms driving interest rate spreads. It highlights the crucial role of banks in mediating these economic forces through their interest rate policies, ultimately shaping the cost of borrowing and influencing the efficiency of financial intermediation in the Ugandan economy.

The Relationship Between Inflation Rates and Interest Rate Spreads: The relationship between inflation rates and interest rate spreads is a subject of substantial scholarly interest and debate within the field of finance and economics (Damane, 2022). Firstly, inflation is widely acknowledged as a critical determinant of interest rate spreads, primarily due to its impact on the cost of funds for financial institutions (Heider et al., 2021; Li et al., 2020). As inflation rises, the purchasing power of money diminishes, prompting lenders to demand higher interest rates to compensate for the erosion of real returns (Galindo & Steiner, 2022). Consequently, banks adjust their lending rates upward to maintain profitability margins, widening the interest rate spread between lending and deposit rates (Galindo & Steiner, 2022; Heider et al., 2021). Empirical research has consistently corroborated this positive relationship between inflation rates and interest rate spreads, emphasizing the role

of inflation expectations in shaping lending behaviors and market dynamics (Hayat et al., 2021; Li et al., 2020). Secondly, the transmission mechanism through which inflation influences interest rate spreads extends beyond direct effects on nominal interest rates (Heider et al., 2021; Li et al., 2020). Inflation exerts indirect effects on interest rate spreads through its impact on borrowers' creditworthiness and default risks (Damane, 2022). Higher inflation rates often coincide with economic uncertainties and income volatility, increasing the likelihood of loan defaults and credit risks for banks (Epor et al., 2023).

As a result, lenders may adopt risk-premium strategies, further widening interest rate spreads to mitigate potential losses (Epor et al., 2023). Thirdly, the duration and persistence of inflationary episodes significantly influence the magnitude of interest rate spreads (Galindo & Steiner, 2022; Heider et al., 2021). Prolonged periods of high inflation breed uncertainty and instability in financial markets, prompting lenders to adopt risk-averse strategies and elevate interest rates to hedge against inflationary pressures (Galindo & Steiner, 2022). Conversely, episodes of moderate and stable inflation tend to exert a dampening effect on interest rate spreads, as market participants exhibit greater confidence in the purchasing power of money and future income streams (Hayat et al., 2021). Fourthly, the institutional and regulatory environment also shapes the relationship between inflation and interest rate spreads (Heider et al., 2021; Li et al., 2020). Central bank policies, such as inflation targeting frameworks, play a crucial role in anchoring inflation expectations and guiding monetary policy actions, thereby influencing interest rate dynamics and spread adjustments (Galindo & Steiner, 2022).

Additionally, the degree of financial market development and competition further modulates the sensitivity of interest rate spreads to inflationary shocks (Galindo & Steiner, 2022). Finally, the interaction between inflation and interest rate spreads underscores the importance of policy responses and regulatory interventions in maintaining financial stability and economic equilibrium (Hayat et al., 2021; Heider et al., 2021). Central banks often employ a mix of monetary policy tools, including interest rate adjustments and open market operations, to manage inflationary pressures and mitigate adverse effects on interest rate spreads (Hayat et al., 2021). Moreover, regulatory measures aimed at enhancing transparency, risk management practices, and market efficiency can mitigate the adverse consequences of inflation volatility on interest rate spreads, promoting a more resilient and competitive banking sector (Heider et al., 2021).

The Effect of GDP on the Banking Sector's Interest Rate Spreads: The effect of Gross Domestic Product (GDP) on the banking sector's interest rate spreads is a topic of significant interest and scholarly inquiry, reflecting the intricate interplay between macroeconomic conditions and financial market dynamics (Chatziantoniou et al., 2021). Firstly, GDP growth serves as a key determinant of interest rate spreads, exerting both direct and indirect effects on banking sector profitability and risk-taking behaviors (Heider, Saidi, & Schepens, 2021). Empirical studies have consistently demonstrated a positive relationship between GDP growth rates and interest rate spreads, highlighting the role of economic expansion in enhancing credit demand and risk appetite among borrowers (Jefferis et al., 2020). As GDP expands, businesses and households exhibit greater demand for credit to finance investment projects, consumption expenditures, and entrepreneurial ventures, thereby driving up loan volumes and revenues for banks (Nabende et al., 2020). Consequently, banks may adjust their lending rates upward to capitalize on growing credit demand, widening interest rate spreads to maximize profitability margins (Owusu-Ankamah & Sakyi, 2021).

Secondly, the composition and structure of GDP growth also influence the distributional effects of interest rate spreads within the banking sector (Shrestha, 2022). Studies have documented variations in interest rate spreads across different sectors of the economy, reflecting disparities in credit risks, market conditions, and regulatory environments (Jefferis et al., 2020). For instance, during periods of rapid industrialization and infrastructure development, banks may allocate a greater share of their lending portfolios to sectors with higher growth prospects, such as manufacturing, construction, and infrastructure projects, leading to differential pricing of credit and interest rate spreads (Jefferis et al., 2020). Moreover, the presence of structural inefficiencies and credit market imperfections can exacerbate disparities in interest rate spreads, hindering financial intermediation and economic efficiency (Nabende et al., 2020). Thirdly, the transmission mechanism through which GDP growth influences interest rate spreads extends beyond direct effects on credit demand to encompass broader macroeconomic factors and policy responses (Shrestha, 2022). Robust GDP growth often coincides with expectations of future inflationary pressures, prompting central banks to adopt preemptive monetary tightening measures to curb inflation risks (Heider et al., 2021).

As central banks raise policy interest rates to anchor inflation expectations, commercial banks adjust their lending rates upward, widening interest rate spreads to reflect higher borrowing costs and inflationary premiums (Owusu-Ankamah & Sakyi, 2021). Conversely, periods of sluggish GDP growth or economic contraction may induce central banks to implement accommodative monetary policies, lowering policy rates and compressing interest rate spreads to stimulate credit growth and economic recovery (Shrestha, 2022). Fourthly, the stability and predictability of GDP growth play a crucial role in shaping interest rate spreads within the banking sector (Shrestha, 2022). Volatility and uncertainty in GDP growth rates can undermine market confidence, exacerbate credit risks, and induce risk aversion among lenders, leading to wider interest rate spreads and tighter credit conditions (Jefferis et al., 2020). Conversely, sustained periods of stable and moderate GDP growth foster a conducive lending environment, enabling banks to calibrate interest rate spreads more efficiently and allocate credit resources to productive investments (Nabende et al., 2020). Finally, the nexus between GDP growth and interest rate spreads underscores the importance of macroeconomic policy coordination and regulatory interventions in promoting financial stability and sustainable economic growth (Owusu-Ankamah & Sakyi, 2021). Central banks and regulatory authorities play a pivotal role in managing systemic risks, enhancing market transparency, and fostering a competitive banking sector conducive to efficient credit intermediation (Heider et al., 2021).

The Effect of the Real Effective Exchange Rate (Reer) on Interest Rate Spread: The effect of the real effective exchange rate (REER) on interest rate spreads is a complex interplay influenced by various economic and financial factors. Firstly, the REER, which measures the relative value of a country's currency against a basket of foreign currencies adjusted for inflation, plays a crucial role in shaping interest rate spreads by influencing the competitiveness of exports and imports (Jefferis et al., 2020). A depreciation of the REER typically enhances export competitiveness by making domestic goods cheaper for foreign buyers, thereby boosting export revenues and foreign exchange inflows. Conversely, an appreciation of the REER may improve import competitiveness by reducing the cost of imported goods, leading to increased consumer purchasing power and import demand. These fluctuations in trade competitiveness can affect interest rate spreads through their impact on economic activity, exchange rate stability, and inflation expectations. Secondly, the relationship between the REER and interest rate spreads is further nuanced by its implications for monetary policy and exchange rate management.

Central banks often intervene in foreign exchange markets to stabilize the REER and prevent excessive currency fluctuations that could disrupt trade flows and inflation dynamics (Hofmann et al., 2021). Such interventions may involve adjustments to policy interest rates or the implementation of currency pegs or bands to anchor the REER within desired ranges. Changes in monetary policy settings and exchange rate regimes can influence interest rate spreads by affecting banks' cost of funds, market expectations, and risk perceptions. Thirdly, the REER's influence on interest rate spreads is mediated by its implications for inflation dynamics and inflation expectations. Exchange rate movements can directly impact import prices, commodity costs, and production inputs, thereby influencing inflationary pressures and central banks' inflation-targeting objectives (Amanda et al., 2023). Persistent deviations of the REER from its equilibrium level may necessitate monetary policy responses to contain inflationary risks, potentially leading to adjustments in policy interest rates and interest rate spreads. Moreover, exchange rate volatility and uncertainty can affect inflation expectations and risk premia, contributing to fluctuations in interest rate spreads as banks adjust lending rates to reflect changing inflationary environments.

Fourthly, the REER's impact on interest rate spreads is contingent upon the degree of exchange rate pass-through to domestic prices and the openness of the economy to international trade and capital flows. In economies with high trade integration and significant exposure to exchange rate fluctuations, changes in the REER are more likely to translate into adjustments in interest rate spreads as banks respond to shifts in trade competitiveness, inflation dynamics, and external imbalances (Rutayisire, 2020). Conversely, in closed or less open economies with limited exchange rate pass-through, the transmission of REER movements to interest rate spreads may be less pronounced, with other domestic factors exerting greater influence on spread dynamics. Finally, the role of the REER in shaping interest rate spreads underscores the importance of exchange rate policy coordination, macroeconomic stability, and financial market development in fostering efficient credit intermediation and sustainable economic growth. Central banks and policymakers must carefully calibrate exchange rate policies, monetary policy settings, and regulatory frameworks to mitigate exchange rate risks,

promote financial stability, and ensure that interest rate spreads remain conducive to investment, borrowing, and economic expansion (Owusu-Ankamah & Sakyi, 2021).

The Relationship Between Private Sector Credit and Interest Rate Spreads: The relationship between private sector credit and interest rate spreads is a fundamental aspect of financial intermediation that significantly influences the functioning of banking sectors worldwide (Akinci & Queralto, 2022; Alper et al., 2020; Heider et al., 2021; Ibenyenwa et al., 2020; Kaas et al., 2020; NWAFOR, 2022; Obeh & Brotoboh, 2021; Schelling & Towbin, 2020). Firstly, private sector credit, which encompasses loans extended to non-governmental entities such as businesses and households, serves as a key driver of interest rate spreads within the banking sector. Empirical studies consistently demonstrate a positive correlation between private-sector credit growth and interest rate spreads, indicating that expansions in credit availability tend to coincide with wider interest rate spreads (Ibenyenwa et al., 2020). This relationship is grounded in the demand-supply dynamics of credit markets, wherein increasing credit demand exerts upward pressure on lending rates, contributing to spread widening as banks seek to maintain profitability margins. Secondly, the composition and quality of private-sector credit portfolios play a crucial role in shaping interest rate spreads (NWAFOR, 2022). Banks' lending decisions are influenced by borrowers' creditworthiness, risk profiles, and collateral assets, which in turn impact the pricing of loans and interest rate spreads.

High-risk borrowers typically face higher borrowing costs and interest rate spreads to compensate lenders for elevated default probabilities and credit risks, while low-risk borrowers may benefit from lower interest rates and narrower spreads. Consequently, variations in the risk composition of private sector credit portfolios can lead to differential pricing of loans and interest rate spreads across borrower categories and industries (Obeh & Brotoboh, 2021). Thirdly, the availability and cost of funding sources for banks also mediate the relationship between private-sector credit and interest rate spreads (Alper et al., 2020). Banks rely on a mix of funding sources, including deposits, interbank borrowing, capital markets, and central bank facilities, to finance their lending activities. Changes in the availability or cost of these funding sources can influence banks' cost of funds and funding strategies, thereby affecting interest rate spreads. For instance, a shortage of deposits or disruptions in interbank funding markets may compel banks to resort to costlier funding alternatives, leading to upward pressure on interest rates and spread widening (Schelling & Towbin, 2020). Conversely, improvements in funding conditions or access to central bank liquidity facilities may alleviate funding constraints and facilitate spread compression.

Fourthly, the role of regulatory frameworks and prudential standards in shaping the relationship between private-sector credit and interest rate spreads cannot be overstated (Heider et al., 2021). Regulatory requirements, such as capital adequacy ratios, liquidity ratios, and loan loss provisioning standards, influence banks' risk-taking behaviors, lending practices, and interest rate pricing strategies. Stringent regulatory standards aimed at enhancing financial stability and risk management practices may induce banks to adopt conservative lending policies, resulting in wider interest rate spreads to account for higher capital and liquidity buffers. Conversely, lax regulatory standards or regulatory forbearance measures may incentivize risk-taking behaviors and lead to compressed interest rate spreads in the pursuit of market share or profitability. Finally, the macroeconomic environment and business cycle dynamics also interact with private sector credit and interest rate spreads (Kaas et al., 2020). Economic expansions typically coincide with rising credit demand, buoyant business sentiment, and heightened risk appetite, contributing to spread narrowing as banks compete for market share. Conversely, economic contractions or recessions may dampen credit demand, increase credit risks, and induce risk aversion among lenders, leading to spread widening as banks tighten lending standards and price loans to reflect higher risks.

The Moderation of the Relationship Between Inflation and Interest Rate Spreads Influenced by Financial Development, As Indicated by Private Sector Credit: The moderation of the relationship between inflation and interest rate spreads influenced by financial development, as indicated by private sector credit, is a crucial aspect of understanding the dynamics of monetary policy transmission and financial stability (Jefferis et al., 2020). Firstly, financial development, reflected in the depth and breadth of private sector credit markets, plays a pivotal role in shaping the sensitivity of interest rate spreads to inflationary pressures (Owusu-Ankamah & Sakyi, 2021). In economies with well-developed credit markets, characterized by efficient allocation of capital, robust risk management practices, and diversified sources of funding, the impact of

inflation on interest rate spreads may be moderated (Jefferis et al., 2020). This moderation arises from the ability of financial institutions to accurately assess and price credit risks, thereby reducing the need to widen spreads excessively in response to inflation-induced uncertainties (Owusu-Ankamah & Sakyi, 2021). Secondly, the role of private sector credit in moderating the inflation-interest rate spread relationship hinges on its influence on borrower behavior and credit market dynamics (Jefferis et al., 2020).

As financial development progresses, borrowers gain increased access to credit, enabling them to better withstand inflationary shocks by adjusting investment and consumption decisions (Owusu-Ankamah & Sakyi, 2021). Moreover, a diverse range of credit products and financing options may emerge, allowing borrowers to hedge against inflation risks and stabilize interest rate spreads through instruments such as inflation-indexed loans or derivatives (Gitiri, 2022). Thirdly, the effectiveness of financial development in moderating the inflation-spread relationship depends on the quality of financial infrastructure, regulatory frameworks, and institutional arrangements (Jefferis et al., 2020). Sound banking supervision, transparent disclosure standards, and legal enforcement mechanisms are essential for maintaining the stability and integrity of credit markets, enhancing confidence among market participants, and mitigating systemic risks that could amplify the inflationary impact on interest rate spreads (Alper et al., 2020). Moreover, the presence of competitive financial institutions and diversified funding sources fosters innovation, product diversification, and risk-sharing mechanisms, contributing to the resilience of credit markets to inflationary shocks (Jefferis et al., 2020).

Fourthly, the interaction between financial development, inflation, and interest rate spreads underscores the importance of coordinated monetary and regulatory policies in promoting financial stability and economic growth (Jefferis et al., 2020). Central banks must carefully calibrate monetary policy tools to balance the objectives of price stability, financial inclusion, and credit market efficiency, taking into account the evolving needs and dynamics of the economy (Chatziantoniou et al., 2021). Regulatory authorities, on the other hand, must ensure that prudential regulations and supervisory frameworks are robust and adaptive to changing market conditions, thereby fostering a sound and resilient financial system (Alper et al., 2020). In conclusion, the moderation of the relationship between inflation and interest rate spreads influenced by financial development, as indicated by private sector credit, is a multifaceted process that involves interactions between market dynamics, regulatory frameworks, and macroeconomic policies (Jefferis et al., 2020). Understanding these dynamics is essential for policymakers, regulators, and market participants to formulate effective strategies for managing inflation risks, promoting financial stability, and fostering sustainable economic development (Akinci & Queralto, 2022).

3. Methodology

Research Design: This study adopts a quantitative research design, employing time series data from Uganda. A secondary data collection strategy is implemented, relying on established and reputable sources to minimize potential bias and ensure data accuracy.

Data Sources and Period: The data for the analysis is derived from a Bank of Uganda and World Bank Open Data covering a period of twenty (22) years from 2000 to 2022. This selection of time is strategic for Uganda given that it is the post-reformation period after the economic recovery efforts in the 1990s.

Data Description: The collected data comprises the following variables:

Interest Rate Spread (SPREAD): Defined as the difference between the lending rate (LR) and the Deposit Rate (DR). The spread between these rates captures the profitability of banks' intermediation activities.

Inflation Rate (INFL): Measured as the annual percentage change in the Gross Domestic Product (GDP) deflator. The GDP deflator is a price index that reflects changes in the overall prices of goods and services produced in Uganda. This variable captures changes in the general price level and potential inflationary pressures within the Ugandan economy**.**

Gross Domestic Product Growth Rate (GDP): Represented by the year-on-year percentage change in real GDP. This variable reflects the economic growth performance of Uganda.

Real Effective Exchange Rate (REER): This variable captures the weighted average exchange rate of the Ugandan Shilling (UGX) relative to a basket of major trading partner currencies, providing insights into the external competitiveness of the Ugandan economy.

External Debt Stock (EXTDEBT): Measured as the total outstanding external debt of Uganda as a percentage of GDP. This variable reflects the nation's external indebtedness and potential vulnerabilities to external shocks.

Private Sector Credit (PSC): Represented by the total domestic credit provided by the banking system to the private sector as a percentage of GDP. This variable serves as a proxy for financial development in Uganda.

Interaction Term (INF_PSC): This term is constructed by multiplying the inflation rate (INFL) and private sector credit (PSC). It captures the moderating effect of financial development (proxied by PSC) on the relationship between inflation and the interest rate spread.

Econometric/Statistical Methods: An **Autoregressive Distributed Lag (ARDL) model** is employed to estimate the dynamic interactions between the aforementioned variables and the interest rate spread in Uganda. The ARDL model is particularly well-suited for this study due to the following reasons: The ARDL model enables researchers to look into how variable relationships change over short and long periods, making it efficient for studies with short observations like the current study with just 22 years. Additionally, its incorporation of an error correction mechanism enhances the analysis by quantifying the rate at which variables converge to their long-term equilibrium following a disturbance. This dual capability allows researchers to dissect the intricate interactions between variables over different time horizons, providing a varied understanding of their relationship.

Model Specification: The ARDL model is specified as follows:

$$\Delta SPREAD_t = \alpha_0 + \beta_1 \Delta INFL_t + \beta_2 \Delta GDP_t + \beta_3 \Delta REER_t + \beta_4 \Delta EXTDEBT_t + \beta_5 \Delta PSC_t + \beta_6 \Delta INF\_PSC_t + \gamma_1 INFL_{t-1} + \gamma_2 GDP_{t-1} + \gamma_3 REER_{t-1} + \gamma_4 EXTDEBT_{t-1} + \gamma_5 PSC_{t-1} + \gamma_6 \Delta INF\_PSC_{t-1} + \gamma_7 SPREAD_{t-1} + ect \quad \text{(i)}$$

Where;

Δ denotes the first-difference operator). **α_0:** Constant term, **β_i (i = 1 to 6):** Short-run coefficients of the explanatory variables. These coefficients capture the immediate impact of changes in the explanatory variables on the change in the interest rate spread. **γ_i (i = 1 to 5):** Long-run coefficients of the explanatory variables. These coefficients estimate the influence of the explanatory variables on the long-run equilibrium level of the interest rate spread. **ε_t:** Error term at time t. This term captures any unexplained variations in the interest rate spread not accounted for by the included variables in the model.

4. Results

Table 1: Summary Statistics of Study Variables

Variable	Obs	Mean	Std. Dev.	Min	Max
SPREAD	23	18.13917	1.689369	15.72606	22.85656
INFL	23	8.495212	17.18646	-3.16956	85.35328
GDP	23	5.906849	2.181862	2.951306	10.78474
REER	23	102.8512	6.674581	92.12749	116.989
EXTDEBT	23	36.73352	19.74794	11.17634	70.75517
Psc	23	8134.807	6887.114	621.7937	21803.3
INF_PSC	23	49596.75	69517.55	-2723.41	341010.5

The summary statistics suggest diverse distributions: SPREAD shows a relatively narrow range with low variability, indicative of a more stable measure. 'INFL' exhibits a high standard deviation relative to its mean, suggesting a right-skewed distribution with periods of extreme inflation. 'GDP' has a moderately low standard deviation, indicating relatively stable economic growth with small year-to-year changes. 'REER' presents

moderate fluctuations, which might imply periodic adjustments in currency valuation or trade conditions. 'EXTDEBT' has a high standard deviation, pointing to significant variation in external debt levels, possibly reflecting economic policy changes or external economic shocks. The 'pSC' and the interaction term 'INF_PSC', display large values with substantial spread and variance, suggesting it captures broad economic trends with potential outliers or periods of extreme values.

Correlations Results

Table 2: Correlation Coefficients between Study Variables

	SPREAD	INFL	GDP	REER	EXTDEBT	psc	INF_PSC
SPREAD	1						
INFL	0.1503	1					
GDP	-0.3336	0.0856	1				
REER	0.1729	0.1691	0.0403	1			
EXTDEBT	-0.2961	-0.2782	-0.2871	0.0284	1		
psc	-0.1386	-0.1723	-0.5050*	-0.5509*	-0.0704	1	
INF_PSC	0.0869	0.8985*	-0.051	-0.0554	-0.3624	0.2291	1

The correlation matrix for Uganda's economic indicators shows a mix of weak to moderate correlations, indicating varying degrees of linear relationships between the variables. Interest rate spread (SPREAD) has only weak associations with most other variables, suggesting it does not move strongly in tandem with inflation, GDP growth, or private sector credit. Inflation (INFL) shows a very strong positive correlation with the interaction term (INF_PSC), as expected, since the interaction term includes inflation, but otherwise has weak to moderately negative correlations with external debt and private sector credit. GDP growth is weakly correlated with most variables, though it has a moderate negative relationship with private-sector credit. The real effective exchange rate (REER) has a moderate negative correlation with private sector credit, indicating some inverse relationship. External debt (EXTDEBT) has weak negative correlations with most variables, implying a slight tendency to move inversely to economic growth and credit availability. Generally, the correlations suggest that these economic variables can be included in the same regression equation without any threat of multicollinearity.

Diagnostic Tests

Heteroscedasticity Test: A heteroskedasticity test, checks for uneven spread of errors in a regression model. Normally, errors should be consistent across the board (homoskedasticity). White's test is useful because it doesn't require any specific assumptions about how the errors might be spread unevenly (heteroskedasticity). This makes it a good general test to see if there's a problem with the way errors are spread. If the test finds an uneven spread, it means the standard errors in the regression might be wrong, which can lead to unreliable results.

Table 3: White's test for Homoskedasticity

Test		chi2 (df)	Prob > chi2
White's test for Homoskedasticity		23.00 (22)	0.4017
Decomposition			
Source	**chi2**	**df**	**p**
Heteroskedasticity	23	22	0.4017
Skewness	1.59	6	0.9533
Kurtosis	2.4	1	0.1212
Total	***26.99***	***29***	***0.5722***

The White test results, with a chi-square statistic of 23.00 and a p-value of 0.4017, indicate no rejection of the null hypothesis of homoskedasticity, showing no statistical evidence of heteroskedasticity in the model. Cameron & Trivedi's decomposition of the test into components for heteroskedasticity, skewness, and kurtosis, with respective p-values of 0.9533 for skewness and 0.1212 for kurtosis, further supports the absence of significant deviations from normal assumptions. These findings suggest that the residuals are homoskedastic and normally distributed, affirming the model's specification and indicating that the ordinary least squares estimates are reliable and unbiased, given other OLS assumptions are met. Thus, the model is well-specified, and its estimates can be considered the best linear unbiased estimators (BLUE).

Serial Correlation Test: Serial correlation refers to the statistical dependence between a variable and lagged versions of itself over successive time periods. It is a prevalent characteristic in time series data, where past observations can hold predictive power for future values. Rigorously testing for the presence of serial correlation is vital. Its existence can invalidate the assumption of independence inherent in conventional statistical models, leading to inefficient estimations and erroneous inferences regarding the temporal dynamics of the data. The study uses the Breucsh-Godfrey test, and the results are as follows.

Table 4: Serial Correlation Test Results

lags(p)	chi2	DF	Prob > chi2
1	0.013	1	0.9104

The Breusch-Godfrey LM test for autocorrelation, with a chi-square statistic of 0.013 and a p-value of 0.9104 for one lag, indicates no evidence of first-order autocorrelation in the model's residuals. This outcome suggests that the residuals are independent across observations, fulfilling a crucial assumption for the validity of regression analysis. Consequently, this independence confirms the efficiency of the OLS estimators, ensuring that standard errors and test statistics used in hypothesis testing are reliable. Thus, the model meets important criteria for producing valid and reliable statistical inferences.

Normality Test for Residuals: A crucial aspect of time series analysis involves rigorously testing the normality of residuals. This evaluation ensures that the error terms in a model, often from regression analysis, adhere to a normal distribution. This assumption is vital because many statistical tests and confidence intervals rely on it, which in turn guarantees desirable properties like efficiency and unbiasedness in estimators. Examining normality safeguards the reliability of subsequent inferences. In time series data, non-normal residuals can signal model misspecifications, hidden nonlinearities, or influential factors, potentially weakening the model's predictive power. The Shapiro-Wilk test, known for its sensitivity to even slight deviations from normality in smaller datasets, is a strong choice for this purpose. It compares the observed residuals to a theoretical normal distribution, acting as a stringent check on the normality assumptions for time series residuals.

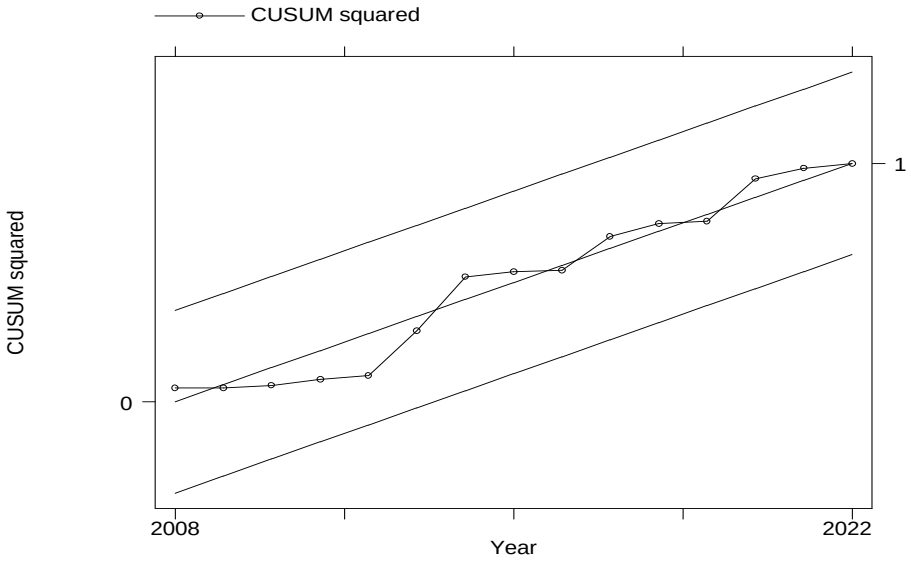
Table 5: Shapiro-Wilk (SW) Test Results

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj chi2(2)	Prob>chi2
residuals	23	0.4724	0.2424	2.08	0.3526

The Shapiro-Wilk test, yielding a p-value of 0.3526, indicates that the null hypothesis of normality cannot be rejected for the distribution of residuals. This assertion is corroborated by the non-significant p-values obtained for tests of skewness (0.4724) and kurtosis (0.2424), further reinforcing the presumption of normality. Such findings suggest that the deviation from a normal distribution is not statistically significant. Consequently, the assumption of normality, which is imperative for the integrity of statistical inferences within the framework of regression analysis, seems to be satisfied. The lack of significant skewness and kurtosis lends additional credibility to the proposition that the residuals approximate a normal distribution, thereby substantiating the methodological soundness of the econometric model employed.

Model Stability Test: A model stability test plays a critical role in ensuring the model's relevance over time. These tests check if the relationships between variables captured by the model remain consistent as new data gets added. A stable model suggests the underlying process generating the data is constant, while instability might indicate changes in the relationships. This is crucial because reliable inferences depend on stable model

parameters. If a model is unstable, its estimated parameters may not reflect the entire data, leading to unreliable predictions and conclusions. The CUSUM of Squares graph is a powerful tool for detecting such instability. This technique can pinpoint specific time periods where the model's variance deviates from expectations, potentially indicating shifts in the data-generating process. This way, the CUSUM graph helps monitor model stability and ensure its ongoing validity.



The Cumulative Sum of Squares (CUSUM of squares) graph, utilized for assessing the stability of regression model coefficients over time, displays data from 2008 to 2022. Observations focus on the CUSUM line's behavior in relation to the boundary lines: stability is inferred if the CUSUM line remains within these boundaries while crossing them suggesting structural breaks. In this case, the CUSUM line consistently stays within the boundaries throughout the observed period, indicating the regression coefficients' stability without evidence of structural breaks, despite nearing the upper boundary at times, which suggests minor variations but no significant structural changes.

Cointegration Investigation: A cointegration test is a statistical procedure utilized to determine the presence of a stable, long-run equilibrium relationship between two or more non-stationary time series variables. Typically required when dealing with integrated series, cointegration testing ascertains whether individual time series variables, which may individually trend over time, move together consistently, thereby implying a meaningful association that is not spurious. The necessity of such testing lies in its ability to inform the appropriate modeling strategy for time series analysis, ensuring that inferred relationships reflect a genuine nexus rather than a coincidental correlation. The Autoregressive Distributed Lag (ARDL) bounds test stands out in this context for its flexibility, allowing for the inclusion of variables of different integration orders, I(0) or I(1), without the need for pre-testing for unit roots. This characteristic of the ARDL bounds test, coupled with its applicability irrespective of the sample size, renders it a robust alternative to traditional cointegration tests, making it particularly suitable for empirical analyses where the underlying data-generating processes are complex and sample sizes are limited.

Table 6: Bounds Test Results

Test	**F-Statistic**	**t-Statistic**		
Observed Value	3.7	-3.395		
Critical Values (0.1 - 0.01), **F-statistic**, Case 3				
Significance (%)	**I(0) Lower Bound**	**I(0) Upper Bound**	**I(1) Lower Bound**	**I(1) Upper Bound**
10	2.45	3.15	3.61	4.43
5	**2.75**	**3.99**	**3.15**	**4.43**
2.5	3.17	4.15	3.41	5.01

1	3.37	4.43	3.64	5.49
Critical Values (0.1 - 0.01), **t-statistic**, Case 3				
Significance (%)	**I(0) Lower Bound**	**I(0) Upper Bound**	**I(1) Lower Bound**	**I(1) Upper Bound**
10	-2.86	-3.43	-4.38	-4.99
5	**-3.13**	**-3.73**	**-4.66**	**-5.34**
2.5	-3.37	-3.97	-4.9	-5.61
1	-3.58	-4.21	-5.15	-5.89

Pesaran/Shin/Smith (2001) ARDL Bounds Test, H0: no levels relationship.

The cointegration results are interpreted at the 5% significance level. The table provides critical values for the F-statistic and t-statistic at different confidence levels. The study compares the absolute values of these statistics with the critical values for integrated variables of order 1 (I(1)). If the absolute value is greater than the critical value (for F-statistic) or less than the critical value (for t-statistic), we can reject the null hypothesis of no cointegration. In this case, neither the F-statistic nor the t-statistic reaches the 5% significance level to reject the null hypothesis. Therefore, based on this test at a 5% significance level, we don't have enough evidence to conclude that the variables are cointegrated. Despite the absence of cointegration evidence at the 5% significance level, a continuation of model estimation using the Autoregressive Distributed Lag (ARDL) approach remains justifiable. This decision is underpinned by the ARDL model's robustness in environments where variables are integrated of order 0, I(0), or order 1, I(1), and do not necessarily need to be integrated. The ARDL framework can estimate both short-term and long-term dynamics simultaneously, providing valuable insights even when cointegration is not established. Furthermore, the limited sample size may have constrained the power of the cointegration test, potentially obscuring the true underlying relationships among the variables. Given that the theoretical underpinnings suggest an expectation of a relationship, and ARDL is known for its flexibility and efficacy with small samples, it is pragmatic to proceed with the estimation process. This will allow for a more nuanced exploration of the variables' interplay, capturing any latent associations that the preliminary cointegration tests may not have detected.

ARDL Regression Results: The study proceeded with estimating an ARDL model with one lag for all variables. This choice aligns with the Bounds testing approach and is backed by several methodological considerations. The one-lag ARDL model excels at capturing both the short-run dynamics through its focus on immediate past influences and the potential long-term equilibrium relationship between the variables. This approach offers a comprehensive analysis of temporal interactions. Additionally, using just one lag keeps the model parsimonious, which is particularly important when dealing with limited data as it avoids consuming unnecessary degrees of freedom. The uniform lag structure further simplifies the model, making it easier to compare how different variables influence the dependent variable and reducing the risk of overfitting the data. In essence, the one-lag ARDL model offers a well-balanced approach, navigating the complexities of time series data with methodological rigor and analytical clarity. The results are presented as follows.

Short Run

Table 7: Short Run ARDL Results

SR	Coef.	S.E	t-Statistic	p-Value	95% CI Lower	95% CI Upper
Inflation	0.256199	0.113121	2.26	0.053	-0.00466	0.517056
GDP	0.590295	0.293033	2.01	0.079	-0.08544	1.26603
REER	0.265593	0.094504	2.81	0.023	-0.04767	0.48352
External Debt	0.072996	0.043897	1.66	0.135	-0.02823	0.174223
Private Sector Credit	0.001927	0.001186	1.63	0.143	-0.00081	0.004661
INF_PSC.	-0.0006	3.06E-05	-1.96	0.086	-0.00013	-1.1E-05
Constant	49.91061	14.59392	3.42	0.009	16.25698	83.56425

The short-run ARDL model findings illustrate a nuanced dynamic between inflation, GDP growth, and other variables with the interest rate spread, contrasting with long-run observations. Specifically, both inflation and GDP growth are associated with an increase in the interest rate spread in the short run, a reversal from their long-run negative relationship. The Real Effective Exchange Rate positively impacts the spread significantly in the short run, diverging from its long-run influence. While external debt's positive impact and private sector credit's negative impact on the spread are not statistically significant in the short run, they align with the long-run trends. Interestingly, the interaction term between inflation and private sector credit, which positively affects the spread in the long run, shows a negative and insignificant short-run effect. These variances between short-run and long-run effects underscore the complex and dynamic nature of economic relationships, indicating that immediate responses to inflation and GDP growth differ from their longer-term adjustments.

Long Run

Table 8: Long Run ARDL Results

Variable	Coefficient	Std. Error	t-Statistic	P-value	95% CI Lower	95% CI Upper
SPREAD $_{L1}$	-1.2171	0.3744	-3.4	0.009	-2.1344	-0.4773
INFL	-2.7677	0.1402	-2.66	0.029	-5.1694	-0.3659
GDP	-1.1316	0.24	-4.72	0.002	-1.685	-0.5783
REER	-0.0966	0.0505	-1.91	0.092	-0.213	0.0199
EXTBDEBT	-0.0274	0.0814	-1.51	0.169	-0.0693	0.1441
psc	-0.0007	0.0002	-4.05	0.004	-0.0011	-0.0003
INF_PSC	0.0001	0.00003	2.48	0.038	0.00001	0.0001
Sample Period	2001 - 2022					
Number of obs	22					
R-squared	0.8471					
Adjusted R-squared	0.5987					
Root MSE	1.045					
Log-likelihood	-21.0572					
Lag structure	ARDL (1,1,1,1,1,1,1)					

The ARDL regression analysis, covering 2001 to 2022, reveals a strong relationship between the interest rate spread and various explanatory variables, with the model explaining approximately 84.71% of the variance in the interest rate spread. A notable finding is the negative and significant relationship between the lagged interest rate spread and the current spread, suggesting that a higher previous period's spread leads to a lower current period spread. Additionally, both inflation and GDP growth negatively impact the interest rate spread, indicating that higher rates of inflation and GDP growth correlate with lower spreads. While the real effective exchange rate and external debt show negative coefficients, these are not statistically significant, hinting at a weaker influence on the spread. Conversely, an increase in private-sector credit is associated with a decrease in the interest rate spread, and interestingly, the interaction between inflation and private-sector credit positively affects the spread.

5. Discussion and Conclusion

The relationship between inflation rates and interest rate spreads in Uganda in the short run is positive and marginally significant (p=0.053), suggesting that a unit increase in the inflation rate increases the interest rate spread by 0.2561, albeit with a marginal significance that is slightly above the conventional threshold of 0.05. This aligns with the liquidity preference theory, where lenders demand higher interest rates as compensation for expected inflation. Long-run effects are negative and significant (p=0.029), indicating that in the longer term, high inflation may dampen the interest rate spread by 2.7677. This could be due to the central bank's monetary policy reacting to inflation, impacting on long-term lending rates. The slight discrepancy between

the short-run and long-run effects highlights the complexities of monetary policy and inflation dynamics in Uganda. The Central Bank of Uganda might need to manage inflation proactively to maintain stable interest rate spreads.

GDP has a significant short-run positive effect on the interest rate spreads (p=0.079), with a coefficient of 0.5903 indicating that economic growth is associated with wider spreads. This could be because, as the economy grows, demand for credit increases, allowing banks to charge higher spreads.

However, in the long run, the effect is negative and highly significant (p=0.002), with a coefficient of -1.1316. As the economy matures, increased competition and efficiency in the banking sector might drive spreads down. As the Ugandan economy grows, efforts to enhance competition and efficiency in the banking sector could be beneficial in reducing interest rate spreads in the long run. The short-run effect of the real effective exchange rate (REER) on interest rate spread is significantly positive (p=0.023), which could be due to foreign exchange risk premiums. When the local currency depreciates, lenders may require higher spreads to compensate for the increased risk. The long-run effect, however, is negative but not significant (p=0.092), suggesting that over time, as the exchange rate stabilizes or if the market adjusts to the volatility, the effect on interest rate spreads diminishes. The Bank of Uganda could focus on stabilizing the exchange rate to manage the short-term effects on interest rate spreads, whereas in the long term, market adjustments are likely to mitigate these effects. The relationship between private sector credit and interest rate spreads is positive in the short run (p=0.143) but not significant.

This suggests that an increase in private sector credit is associated with a small increase in interest rate spreads, though the effect is not statistically robust. The lack of significance could indicate other overriding factors in the determination of spreads. While the private sector credit's influence on interest rate spreads is not clear-cut, encouraging responsible lending and borrowing practices could stabilize the impact on spreads. Financial development represented by private sector credit seems to moderate the relationship between inflation and interest rate spreads. In the short run, the interaction term between inflation and private sector credit (INF_PSC) has a negative coefficient, suggesting that increased financial development may reduce the positive impact of inflation on interest rate spreads. However, this effect is not significant in the short run (p=0.086) but is positive and significant in the long run (p=0.038). This indicates that over time, financial development may actually accentuate the effect of inflation on spreads, possibly by increasing the responsiveness of the banking sector to inflationary pressures. Strengthening the financial sector in Uganda could potentially magnify the effects of inflation on interest rate spreads, so a balanced approach to financial development is necessary.

Recommendations: Based on these findings, it is recommended that the Central Bank of Uganda and policymakers focus on stabilizing inflation and exchange rates to manage interest rate spreads in the short term. In the long term, policies to enhance the efficiency and competitiveness of the banking sector can help in reducing spreads as the economy grows. Furthermore, a cautious approach to financial development should be taken to ensure it does not adversely impact on the banking sector's stability.

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Understanding the Dynamics Between Monetary Policy and Interest Rate Spreads in Uganda: A Quantitative Study

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Abstract: This study delves into the intricate relationship between monetary policy variables and interest rate spreads in Uganda's financial sector. It examines the impact of the rediscount rate, inflation, money supply, and the Real Effective Exchange Rate on interest rate spreads. Findings indicate that while short-term changes in the rediscount rate have a limited effect on interest rate spreads, higher rates widen spreads in the long term as banks adjust strategically. Initially, inflation narrows spreads, but persistent high inflation widens them over time as banks hedge against inflation risk. Moreover, an increase in money supply reduces spreads in the short run but has diminishing effects over time. Recommendations include transparent adjustments of the rediscount rate, robust inflation targeting frameworks, and vigilant monitoring of the money supply to support economic growth and financial stability. Overall, this study provides insights for policymakers and financial institutions, emphasizing the importance of considering both short-term and long-term effects in monetary policy adjustments for Uganda's economic stability.

Keywords: *Monetary policy, Interest rate spreads, Uganda.*

1. Background

Interest rate spreads play a crucial role in shaping the economic landscape of any nation (NWAFOR, 2022). They reflect the disparity between the interest rates earned on assets and those paid on liabilities within the financial system (Liao, 2020). Understanding the relationship between interest rate spreads and monetary policy is essential to comprehend the macroeconomic environment as a whole (Mbabazize et al., 2020). It is impossible to overestimate the impact of monetary policy tools on interest rate spreads, such as the rediscount rate, inflation, money supply, and the Real Effective Exchange Rate (REER) (Schelling & Towbin, 2020). By determining the cost at which banks can obtain funds, the central bank's rediscount rate directly affects interest rate spreads (Mbowe et al., 2020). Changes in the rediscount rate have an impact on lending rates, which in turn changes how interest rate spreads are shaped across the financial system (Shrestha, 2022). Another crucial factor is inflation, which gradually reduces the purchasing power of money (Mbowe et al., 2020). High inflation rates typically lead to wider interest rate spreads as lenders demand compensation for the loss in value (Nabende et al., 2020). Moreover, changes in the money supply exert a significant influence on interest rate spreads (Obeh & Brotoboh, 2021). Expansionary monetary policies, aimed at increasing the money supply, tend to lower interest rates, narrowing spreads as banks compete for borrowers (Owusu-Ankamah & Sakyi, 2021).

Conversely, contractionary monetary policies, which reduce the money supply, may lead to higher interest rates and wider spreads as credit becomes scarcer (Kwak, 2024). Additionally, the Real Effective Exchange Rate (REER) impacts interest rate spreads by influencing the competitiveness of domestic goods and services in the international market (Ibenyenwa et al., 2020). A strong REER may necessitate higher interest rates to attract foreign capital, while a weak REER may prompt lower rates to stimulate economic activity (Lilian et al., 2022). Global interest rate spreads exhibit considerable variation across countries and regions, reflecting diverse economic conditions and monetary policy frameworks (Hofmann et al., 2021). According to the Global Financial Stability Report (2023), as of August 2023, Argentina reported the highest deposit interest rate worldwide, reaching a staggering 113 percent, followed closely by Zimbabwe at 110 percent (Lilian et al., 2022). Conversely, countries such as Switzerland, Denmark, and Japan reported some of the lowest interest rate spreads globally (Hofmann et al., 2021). Switzerland's benchmark three-month SARON stood at -0.75 percent, reflecting the country's negative interest rate policy. Denmark's primary interest rate, the certificate of deposit rate set by the Central Bank, remains relatively low.

Similarly, Japan's Bank of Japan maintained a negative interest rate of -0.1 percent. The role of the rediscount rate, inflation, money supply dynamics, and the Real Effective Exchange Rate (REER) in shaping interest rate spread trends globally and in Africa is significant (NWAFOR, 2022). High inflation rates often coincide with wider interest rate spreads, while monetary policy decisions, especially changes in the rediscount rate, significantly influence borrowing costs and, consequently, interest rate spreads (Nabende et al., 2020). Moreover, fluctuations in the money supply and exchange rate dynamics further contribute to the variability of interest rate spreads, reflecting the broader macroeconomic environment (Obeh & Brotoboh, 2021). In Uganda, interest rate spreads have demonstrated distinctive trends over the years, influenced by both domestic and external factors (Mbabazize et al., 2020). The Central Bank Rate (CBR), a crucial policy rate, stood at 10.00 percent at the end of 2022, representing a notable increase from the previous year's value of 6.50 percent (Schelling & Towbin, 2020). Despite this rise, the CBR remained lower than its level a decade earlier, reflecting efforts to maintain accommodative monetary policy amidst evolving economic conditions (Shrestha, 2022). However, the average CBR in Sub-Saharan Africa was slightly higher at 11.80 percent, indicating regional variations in monetary policy stances (Shrestha, 2022).

An analysis of the decomposition of interest rate spreads in Ugandan banks reveals significant contributors such as overhead costs and loan loss provisions (Nabende et al., 2020). Over the period from 2008 to 2018, overhead costs accounted for an average of 61 percent of spreads, highlighting their substantial impact on the cost of financial intermediation (Mbabazize et al., 2020). Furthermore, the contribution of both overhead costs and loan loss provisions has increased in recent years, underscoring the need to address efficiency and risk management challenges in the banking sector (Nabende et al., 2020). This study aims to contribute to the body of knowledge by providing a comprehensive analysis of the dynamics between monetary policy and interest rate spreads in Uganda (Mbabazize et al., 2020). By examining the role of key factors such as the rediscount rate, inflation, money supply dynamics, and the Real Effective Exchange Rate, this research seeks to offer valuable insights into the drivers of interest rate spread trends (Shrestha, 2022). Ultimately, the findings of this study can inform policymakers and stakeholders about potential strategies to enhance the efficiency and stability of the financial system, fostering sustainable economic growth and development (Nabende et al., 2020).

2. Literature Review

The Effect of Rediscount Rate and Interest Rate Spread in Uganda: The rediscount rate, a key instrument of monetary policy, plays a crucial role in influencing interest rate spreads within the Ugandan economy (Abadi et al., 2023). Firstly, the rediscount rate directly impacts commercial banks' cost of borrowing from the central bank (Mbowe et al., 2020). An increase in the rediscount rate drives up banks' funding costs, which in turn leads to higher lending rates and wider interest rate spreads as banks try to remain profitable (Mbabazize et al., 2020). On the other hand, a decrease in the rediscount rate lowers banks' borrowing costs, which results in lower lending rates and narrower interest rate spreads (Oyadeyi, 2023). Furthermore, changes in the rediscount rate reveal the monetary policy stance of the central bank (Bertsatos, 2023). A tightening monetary policy, characterized by an increase in the rediscount rate, aims to curb inflationary pressures (Kariuki, 2023). Higher interest rates resulting from this policy stance led to wider interest rate spreads, which may dampen borrowing and investment activities in the economy (Ajayi & Akutson, 2023).

Conversely, a loosening monetary policy, indicated by a decrease in the rediscount rate, aims to stimulate economic growth (ARIWA, 2023). Lower interest rates under this policy stance narrow interest rate spreads, making borrowing more affordable for businesses and individuals, thereby encouraging investment and consumption (Oyadeyi, 2023). Thirdly, the responsiveness of interest rate spreads to shifts in the rediscount rate determines how well monetary policy transmission mechanisms work (Epor et al., 2023). Changes in the rediscount rate are effectively transferred to interest rates in the economy through a well-functioning monetary policy framework, which in turn affects decisions about borrowing and spending (Mbabazize et al., 2020). However, factors such as market structure, financial intermediation efficiency, and liquidity conditions may affect the speed and magnitude of this transmission process (Nabende et al., 2020). Fourthly, the relationship between the rediscount rate and interest rate spreads is influenced by external factors such as global economic conditions and exchange rate movements (Nabende et al., 2020).

Fluctuations in international interest rates or changes in exchange rate dynamics can impact domestic interest rates, thereby affecting interest rate spreads in Uganda (Nelson & Julius, 2024). Finally, the stability and predictability of the rediscount rate are essential for maintaining confidence in the financial system and supporting economic growth (Schelling & Towbin, 2020). Central bank credibility and transparent communication regarding monetary policy decisions are critical for anchoring inflation expectations and ensuring that changes in the rediscount rate are transmitted effectively to interest rate spreads, thereby fostering financial stability and sustainable economic development (Owusu-Ankamah & Sakyi, 2021). The Effect of Inflation on Interest Rate Spread in Uganda**:** Inflation exerts a significant influence on interest rate spreads within the Ugandan economy, with several key dynamics at play (Fix, 2023). Firstly, inflation erodes the purchasing power of money over time, prompting lenders to demand higher nominal interest rates to compensate for the expected loss in real value (Gürkaynak et al., 2023).

This phenomenon, known as the Fisher effect, suggests a positive relationship between inflation and nominal interest rates, leading to wider interest rate spreads in periods of high inflation (Azumah et al., 2023). Secondly, inflation expectations play a crucial role in shaping interest rate spreads (Amanda et al., 2023). Anticipated changes in future inflation levels can impact lenders' pricing decisions, leading to preemptive adjustments in nominal interest rates (Fix, 2023). If lenders anticipate higher inflation in the future, they may raise nominal interest rates to preserve real returns, thereby widening interest rate spreads (Gürkaynak et al., 2023). Conversely, if inflation expectations are anchored and well-anchored by credible monetary policy, lenders may be more confident in maintaining stable nominal interest rates, resulting in narrower interest rate spreads (Bertsatos, 2023). Thirdly, the effectiveness of monetary policy in combating inflation influences the relationship between inflation and interest rate spreads (Gormsen & Huber, 2023). Tightening monetary policy, characterized by increases in the central bank policy rate, aims to curb inflationary pressures by raising nominal interest rates (Liao, 2020).

Higher interest rates under this policy stance lead to wider interest rate spreads, which may dampen borrowing and spending activities, thereby contributing to inflation containment (Oyadeyi, 2023). Conversely, loosening monetary policy, indicated by decreases in the policy rate, aims to stimulate economic growth by lowering nominal interest rates (Ibenyenwa et al., 2020). Lower interest rates under this policy stance narrow interest rate spreads, making borrowing more affordable and supporting consumption and investment activities (Liao, 2020). Fourthly, the pass-through of changes in inflation to interest rate spreads depends on the efficiency and competitiveness of the banking sector (Gormsen & Huber, 2023). Factors such as market structure, competition levels, and regulatory frameworks influence the speed and magnitude of this transmission process (Ogden et al., 2024). Finally, external factors such as global inflation trends and exchange rate movements can also impact inflation dynamics and, consequently, interest rate spreads in Uganda (Schoenmaker & Schramade, 2023). Fluctuations in international commodity prices, currency depreciation, or changes in global liquidity conditions can spill over into domestic inflation dynamics, affecting nominal interest rates and interest rate spreads (Abadi et al., 2023).

The Effect of Money Supply and Interest Rate Spread in Uganda: The relationship between money supply dynamics and interest rate spreads in Uganda is characterized by several key interactions (Gunardi & Disman, 2023). Firstly, changes in money supply influence interest rate spreads through their impact on the overall level of liquidity in the financial system (Liao, 2020). Expansionary monetary policies aimed at increasing the money supply inject liquidity into the banking sector, leading to lower interbank lending rates (Oyadeyi, 2023). Lower interbank rates translate into lower lending rates for businesses and individuals, thereby narrowing interest rate spreads (Oyadeyi, 2023). Conversely, contractionary monetary policies aimed at reducing the money supply drain liquidity from the banking system, leading to higher interbank rates (Gunardi & Disman, 2023). Higher interbank rates result in higher lending rates, widening interest rate spreads as banks seek to maintain profitability amidst tighter liquidity conditions (Oyadeyi, 2023). Secondly, changes in money supply dynamics influence interest rate spreads by affecting inflation expectations (Kariuki, 2023). Expansionary monetary policies may raise concerns about potential inflationary pressures, leading to upward adjustments in inflation expectations (Gunardi & Disman, 2023). Anticipated increases in inflation expectations can prompt lenders to demand higher nominal interest rates to compensate for the expected loss in real value, thereby widening interest rate spreads (Fix, 2023).

Conversely, contractionary monetary policies that reduce the money supply may anchor or even lower inflation expectations, leading to stable or declining nominal interest rates and narrower interest rate spreads (Abadi et al., 2023). Thirdly, the responsiveness of interest rate spreads to changes in money supply dynamics depends on the efficiency and competitiveness of the banking sector (Liao, 2020). Factors such as market structure, competition levels, and regulatory frameworks influence the speed and magnitude of the transmission process from changes in money supply to interest rate spreads (Ogden et al., 2024). Furthermore, the credibility and openness of the central bank's communication and policy implementation determine how well monetary policy influences the dynamics of the money supply and interest rate spreads (Nabende et al., 2020). Lastly, outside variables that may affect Uganda's money supply dynamics and interest rate spreads include changes in exchange rates and worldwide liquidity circumstances (Nelson & Julius, 2024). Fluctuations in international capital flows, changes in global interest rates, or shifts in investor sentiment can spill over into domestic money supply dynamics, affecting interest rates and interest rate spreads (Epor et al., 2023).

The Effect of Real Effective Exchange Rate and Interest Rate Spread in Uganda: The Real Effective Exchange Rate (REER) plays a crucial role in shaping interest rate spreads within the Ugandan economy (Uche et al., 2023), with several key dynamics at play (Amanda et al., 2023). Firstly, changes in the REER influence interest rate spreads through their impact on the competitiveness of domestic goods and services in the international market (Nelson & Julius, 2024). A strong REER, indicating an overvalued exchange rate, can lead to a loss of competitiveness for Ugandan exports, as they become relatively more expensive for foreign buyers (Epor et al., 2023). This loss of export competitiveness can weigh on economic growth and external balances, prompting policymakers to adopt measures to support export-oriented industries (Nelson & Julius, 2024). One such measure may involve lowering interest rates to stimulate domestic demand and offset the adverse effects of an overvalued exchange rate (Ogden et al., 2024). Lower interest rates under this scenario narrow interest rate spreads, making borrowing more affordable for businesses and individuals, thereby supporting consumption and investment activities (Gunardi & Disman, 2023). Conversely, a weak REER, indicating an undervalued exchange rate, can enhance the competitiveness of Ugandan exports (Gürkaynak et al., 2023).

3. Methodology

This section describes the method used to explore how monetary policy affects interest rate spreads in Uganda, employing a quantitative strategy. An Auto-Regressive Distributed Lag (ARDL) model is employed in the study to investigate the relationships among several variables, including the money supply, inflation, rediscount rate, interest rate spread, real effective exchange rate, external debt, and foreign direct investment.

Research Design: This study adopts a quantitative, non-experimental, longitudinal design to examine the relationship between monetary policy and interest rate spreads in Uganda. It uses time series data to test hypotheses derived from the theory of monetary transmission mechanisms. The analysis focuses on the impact of monetary policy indicators like the rediscount rate, inflation, money supply, real effective exchange rate, external debt, and foreign direct investment on the interest rate spread, guided by a deductive research methodology.

Theoretical Framework: The theoretical underpinning of this study is rooted in the monetary transmission mechanism, which describes how policy-induced changes in the nominal money supply or base interest rates affect real economic variables such as output, inflation, and the spread between lending and deposit rates. The interest rate spread, defined as the difference between lending and deposit rates, serves as a crucial indicator of the monetary policy stance and its effectiveness in influencing economic activities. According to the theory, monetary policy adjustments impact the cost of capital, which in turn affects investment decisions, consumption patterns and ultimately, economic growth.

Model Specification: The study specifies a functional form of the model that captures the dynamic interactions between the monetary policy indicators and the interest rate spread. The general functional form is expressed as:

IRS=f (RDR, INFL, M2, REER, EXTDEBT, FDI)

Where:

- IRS represents the interest rate spread,

- RDR is the rediscount rate,
- INFL denotes inflation,
- M2 signifies money in supply,
- REER stands for the real effective exchange rate,
- EXTDEBT denotes external debt, and
- FDI represents foreign direct investment.

Empirical Model: To empirically estimate the relationships specified in the functional form, the study employs an Auto-Regressive Distributed Lag (ARDL) approach. The ARDL model allows for the examination of both short-term and long-term dynamics among the variables. The econometric form of the model is represented as follows:

$$\Delta LnIRS_t = \alpha_0 + \sum_{i=1}^{p} \alpha_i \Delta LnIRS_{t-i} + \sum_{j=0}^{q} \beta_j \Delta LnX_{t-j} + \epsilon_t$$

Where:

- Δ denotes the first difference operator,
- $LnIRS_t$ is the logarithm of the interest rate spread at time t,
- LnX_{t-j} represents the logarithms of the rediscount rate, inflation, money supply, real effective exchange rate, external debt, and foreign direct investment at time $t-j$
- α_0 is the intercept,
- α_i and β_j are coefficients to be estimated,
- p and q are the lag orders selected based on information criteria,
- ϵ_t is the error term.

Data Collection and Analysis: This research employs time series data for Uganda, drawing from the Bank of Uganda and World Bank databases, covering the years 2000 to 2022. The selection of this period is influenced by data availability and reliability. Before proceeding with the analysis, the data series undergoes the Augmented Dickey-Fuller (ADF) test to check for stationarity. The Auto-Regressive Distributed Lag (ARDL) model, along with the Bounds Testing approach for cointegration, is then applied to estimate the model, aiming to uncover long-term equilibrium relationships among the studied variables.

Estimation Technique and Model Validation: The study adopts the ARDL Bounds Testing approach for estimating the model, chosen for its capability to manage variables of mixed integration orders (either I(0) or I(1)). Optimal lag lengths for the ARDL model are determined based on information criteria, including the Akaike Information Criterion (AIC) and the Schwarz Bayesian Criterion (SBC). To validate the model, diagnostics tests for serial correlation, heteroscedasticity, and model stability are performed, ensuring the empirical findings' accuracy and integrity. The interpretation of the ARDL model's long-run coefficients is then aligned with theoretical insights and previous research on the dynamics between monetary policy and interest rate spreads.

4. Results

Table 9: Summary Statistics of Variables

Variable	Obs	Mean	Std. Dev.	Min	Max
spread	23	18.13957	1.690141	15.73	22.86
Rdr	23	14.34036	3.619416	7.511667	22.04167
Infl	23	8.495212	17.18646	-3.16956	85.35327
m2	23	9657.735	7936.795	1167.493	26302.34
Reer	23	102.8512	6.674581	92.12749	116.989
extdebt	23	36.73352	19.74794	11.17634	70.75517
Fdi	23	3.456787	1.22567	2.039005	6.656597

The table's analysis reveals varied patterns among different economic indicators. The "spread" variable demonstrates a relatively stable distribution, evidenced by its narrow standard deviation, suggesting minor

fluctuations. Conversely, "rdr" (rediscount rate) and "infl" (inflation) show higher volatility, with "infl" particularly displaying a wide range, including negative minimums indicative of deflationary periods. "M2," representing money supply, has a high mean and wide range, indicating significant variations in monetary conditions. "Reer" (real effective exchange rate) exhibits modest variation, pointing to stable comparative price levels. "Extdebt" (external debt) reveals a significant disparity in levels, while "fdi" (foreign direct investment) maintains a consistent mean with occasional outliers, as seen in the maximum value far from the mean. This suggests an economic environment marked by both stability in certain areas and considerable volatility in others.

Table 10: Correlation Results

	SPREAD	RDR	INFL	M2	REER	EXTDEBT	FDI
spread	1						
Rdr	0.6237	1					
Infl	0.1503	-0.0806	1				
m2	-0.2072	-0.2539	-0.1634	1			
reer	0.1736	0.0057	0.1691	-0.5331	1		
extdebt	-0.296	-0.0869	-0.2782	-0.0436	0.0284	1	
fdi	-0.1298	0.1363	-0.0207	-0.3342	0.2519	-0.4141	1

The correlation matrix analysis for the study reveals that while "rdr" (rediscount rate) has a moderately strong positive correlation with "spread" (0.6237), suggesting a direct relationship, it shows minimal correlation with "reer" (real effective exchange rate) and "extdebt" (external debt), and a slight negative correlation with "m2" (money supply). "Infl" (inflation) demonstrates weak correlations with all variables, suggesting limited predictive power. Notably, "m2" is moderately negatively correlated with "reer," indicating potential inflationary pressures as the money supply increases. "Fdi" (foreign direct investment) and "extdebt" display a moderate negative correlation, implying that higher FDI levels may be associated with lower external debt. The matrix suggests multicollinearity might not be a significant concern for this model, as no two variables are highly correlated (beyond the ±0.8 threshold).

Table 11: Variance Inflation Factor Results

Variable	VIF	1/VIF
LnM2	2.08	0.481835
LnREER	1.53	0.651611
LnFDI	1.51	0.66019
LnEXTDEBT	1.49	0.670041
LnINFL	1.4	0.713297
LnRDR	1.19	0.841981
Mean VIF	1.53	

The Variance Inflation Factor (VIF) serves as a diagnostic tool to quantify the extent of multicollinearity within independent variables of a regression model, by elucidating the degree to which the variance of an estimated regression coefficient is inflated due to multicollinearity. A VIF exceeding 5 or 10 denotes pronounced multicollinearity, indicating substantial correlation among the variables, which may impair the precision of the estimated coefficients. Examination of the VIF outcomes reveals that "LnM2" manifests the most significant VIF at 2.08, highlighting a degree of multicollinearity yet remaining beneath the conventional threshold of concern. Additional variables, including "LnREER," "LnFDI," "LnEXTDEBT," "LnINFL," and "LnRDR," exhibit VIF values ranging from 1.19 to 1.53, indicative of a minimal to moderate presence of multicollinearity. The mean VIF value across these variables is computed at 1.53, indicating an average increase of 53% in the variance of coefficient estimates attributed to the intercorrelations among the predictors, compared to a scenario of no correlation. Nonetheless, the relatively subdued VIF figures presented do not denote acute multicollinearity, thereby implying that the estimates of the regression coefficients are likely to be robust and credible.

Diagnostic Tests

Heteroskedasticity Test: A heteroscedasticity test serves as a statistical method to verify a key presumption in regression analysis, which is the constancy of error variance (the disparity between forecasted and observed values) across all independent variables. When this presumption is breached, known as heteroscedasticity, it can undermine the precision of statistical assessments within regression models. Therefore, conducting a heteroscedasticity test is crucial for confirming the dependability of regression analysis and the legitimacy of the inferences made from it. The results of the test are as follows,

Table 12: Breusch-Pagan

Test	H0	Variables	chi2(1)	Prob > chi2
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity	Constant variance	fitted values of D.LnIRS	0	0.9545

The test statistic chi2(1) has a value of 0.00, and the associated probability (Prob > chi2) is 0.9545. This high p-value suggests that there is no statistical evidence to reject the null hypothesis of homoscedasticity (constant variance) in the regression model's errors at conventional significance levels. In practical terms, the results indicate that the variance of the errors is consistent across all levels of the independent variables, and there is no indication of heteroskedasticity in the model based on the fitted values of the dependent variable "D.LnIRS". Therefore, the standard errors of the regression coefficients can be considered reliable for inference.

Serial Correlation Test: Serial correlation is the measure of how much a data point in a time series is related to its preceding data points. This can indicate whether past values influence future values. Testing for serial correlation helps in identifying non-randomness in data, which is essential for creating accurate models. The results are presented as follows,

Table 13: Durbin's Alternative Test for Autocorrelation

Test	H0	lags(p)	chi2	df	Prob > chi2
Durbin's alternative test for autocorrelation	no serial correlation	1	9.986	1	0.0016

The p-value of the test, being below the standard threshold of 0.05, leads to the rejection of the null hypothesis, thereby indicating the presence of serial correlation in the model residuals when considering a single lag. The presence of serial correlation suggests that the residuals are not independent of each other, which can result in inefficiencies in the estimated coefficients and biased standard errors. This could potentially compromise the reliability of any hypothesis tests conducted. However, despite the detection of serial correlation, the model's estimations can still provide valuable insights if the primary objective is prediction rather than inference, or if the model is used as an exploratory tool to identify potential relationships and inform more robust model specifications in future research.

Normality Test for Residuals: In regression analysis, a crucial assumption is the normality of residuals. Residuals represent the discrepancies between the actual values of the dependent variable and those predicted by the model. These residuals should follow a normal distribution. This normality assumption underpins many statistical techniques. These methods rely on the normal distribution to calculate accurate p-values and confidence intervals, which are essential for drawing reliable conclusions about a model's significance. Testing for normality of residuals is therefore vital to ensure the validity of these statistical tools. If the residuals deviate from a normal distribution, it suggests potential issues with the model's specification or the presence of underlying patterns in the data that the model fails to capture. Consequently, neglecting normality tests can lead to inaccurate conclusions and unreliable predictions. The results of the normality test are presented as follows,

Table 14: Skewness/Kurtosis Test for Normality

Test	Variable	Obs	Pr(Skew)	Pr(Kur)	adj chi2(2)	Prob>chi2
Skewness/Kurtosis test for Normality	Residuals	18	0.6615	0.9784	0.19	0.9083

The p-values are all significantly higher than the accepted significance level of 0.05. This suggests that there is insufficient statistical support for the null hypothesis, which states that the residuals have skewness and kurtosis characteristics consistent with a normal distribution. The residuals are consistent with a normal distribution, satisfying an important assumption for many inferential techniques in regression analysis. Therefore, the model does not show violations of the normality assumption based on these test results.

Omitted Variable Test: Omitted variable bias in regression analysis arises when relevant, but excluded, variables influence both the outcome of interest and other included variables. This skews the results, making interpretations of relationships between variables misleading. It's particularly worrisome in time series analysis, where missing variables can introduce errors and invalidate the model. The Ramsey RESET test helps detect such issues by checking for omitted variables, especially those capturing non-linear effects, ultimately improving the reliability of time series models.

Table 15: Ramsey Test Result

Test	H0	F(3, 1)	Prob > F
Ramsey RESET test using powers of the fitted values of D.LnIRS	no omitted variables	27.98	0.1379

The Ramsey RESET test yields an F-statistic of 27.98 and a p-value of 0.1379, testing for the absence of omitted variables in the model. With the p-value exceeding the standard threshold of 0.05, the null hypothesis cannot be rejected, implying that there is no statistical evidence of omitted variable bias within the model's specification according to this test.

Cointegration: Cointegration is a statistical property of a set of time series variables whereby any linear combination of them will tend to revert to a long-term equilibrium, despite individual series being non-stationary. This concept is vital in time series analysis because it implies that the variables have a meaningful long-term relationship even if they appear to drift apart in the short term. In economic terms, this often signifies that the variables influence each other over time. Checking for cointegration is essential as it enables the use of error correction models that account for both short-term fluctuations and long-term equilibrium, thereby providing more reliable forecasts and inferences. The ARDL bounds test for cointegration is particularly useful because it is applicable irrespective of whether the underlying variables are I(0) or I(1), and it provides a systematic approach to testing the existence of a long-term relationship between the variables. The cointegration results for the study as in the table below,

Table 16: Bounds Test Results

F: 33.581				
t: -7.733	H0: no levels of relationship			
Critical Values (0.1 - 0.01), F-statistic, Case 3				
K	**0.1**	**0.05**	**0.025**	**0.01**
1	2.12	3.23	2.45	3.61
2	2.75	3.99	3.15	4.43
Accept the regressor I(0) if F is less than the crucial value. If F exceeds the critical value for I(1) regressors, reject				
T-statistic, Critical Values (0.1 - 0.01), Case 3				
K	**0.1**	**0.05**	**0.025**	**0.01**
1	-2.57	-4.04	-2.86	-4.38
2	-3.13	-4.66	-3.43	-4.99
Accept the I(0) regressors if t > the crucial value. For I(1) regressors, reject if t < critical value.				

Note: in the long-run connection, k is the number of non-deterministic regressors. The critical values are from Smith, Shin, and Pesaran (2001).

The ARDL Bounds Test results show an F-statistic of 33.581 and a t-statistic of -7.733, both of which provide strong evidence against the null hypothesis of no cointegration among the variables in the model. Given that the F-statistic significantly exceeds the upper bound critical value, and the t-statistic is more negative than the lower bound critical value at the 5% significance level, we can conclude that a stable long-term relationship exists between the variables under consideration. This indicates that any short-term imbalances among the variables are likely to adjust toward a long-term equilibrium.

Regression Results: In the long-term analysis of the ARDL model, the rediscount rate appears to be a strong driver of the interest rate spread, suggesting that policy decisions reflected through the rediscount rate have a lasting effect on the spread between lending and deposit rates. Inflation too has a positive association, indicating that over time, as prices rise, the spread tends to widen, possibly reflecting the risk premium required by banks. Conversely, external debt and foreign direct investment (FDI) exert a negative influence, implying that higher external debt levels and greater FDI inflows might compress the interest rate spread in the long run. Notably, the impact of money supply and the real effective exchange rate on the spread is not statistically significant in the long term, which could suggest that their effects may be more transient or overshadowed by other macroeconomic factors. In the short-term scenario, the relationship dynamics shift. Inflation quickly affects the interest rate spread negatively, indicating that immediate inflationary conditions may temporarily narrow the spread. The money supply also shows a significant negative short-term effect, suggesting that an increase in money supply leads to a decrease in the spread, possibly due to an immediate liquidity effect. The real effective exchange rate stands out with a strong positive short-run effect, which might reflect market reactions to currency valuation changes. In both timeframes, the error correction term's significance confirms the model's appropriateness, as it indicates that any short-term imbalances in the interest rate spread correct themselves significantly over time, moving towards the long-term equilibrium established by the model.

Table 17: ARDL Regression Results

Interest Rate Spread	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
Error Correction Term	-0.80915	0.104637	-7.73	0.002	-1.09967	-0.51863
Long Run						
Rediscount Rate	0.282501	0.03438	8.22	0.001	0.187047	0.377955
Inflation	0.076004	0.02452	3.1	0.036	0.007926	0.144083
Money Supply	-0.02341	0.018829	-1.24	0.282	-0.07568	0.028868
REER	0.111216	0.165966	0.67	0.539	-0.34958	0.572011
ExtDebt	-0.07525	0.022987	-3.27	0.031	-0.13907	-0.01143
FDI	-0.16905	0.046757	-3.62	0.022	-0.29887	-0.03923
Short Run						
Rediscount Rate	-0.06305	0.040577	-1.55	0.195	-0.17571	0.049609
Inflation	-0.04511	0.012555	-3.59	0.023	-0.07996	-0.01025
Money Supply	-0.37302	0.12322	-3.03	0.039	-0.71513	-0.0309
REER	0.843667	0.189056	4.46	0.011	0.318765	1.368569
ExtDebt	0.071463	0.036416	1.96	0.121	-0.02964	0.172568
FDI	0.005538	0.030458	0.18	0.865	-0.07903	0.090102
Constant	1.81216	0.735849	2.46	0.069	-0.23089	3.855205

5. Discussion and Conclusion

Rediscount Rate: The interest rate spread is marginally impacted, albeit negatively, in the short term by the rediscount rate. This implies that immediate adjustments to the rediscount rate do not have a strong influence on the difference between the lending and deposit rates in Ugandan banks. This could be because banks may not immediately change their lending behaviors or may have existing loans that are not affected by policy changes. Over time, the positive and significant coefficient for the rediscount rate suggests that higher

rediscount rates lead to wider interest rate spreads. The rediscount rate is a reflection of the borrowing costs incurred by financial institutions. As such, a long-term increase in the rate may lead banks to increase lending rates to maintain profits, even while deposit rates may not increase in line with this. This aligns with the monetary transmission mechanism, where policy rates eventually permeate through to affect lending and deposit rates, with a time lag that results in these long-term effects.

Inflation: Inflation shows a significant negative relationship with the interest rate spread in the short term. When inflation increases, it is typical for the central bank to react by increasing interest rates to control inflationary pressures. In the short term, this may result in a narrowing of the spread if deposit rates are quick to adjust due to heightened demand for compensation against inflation, whereas lending rates might adjust more slowly due to fixed rates on existing loans or lag in risk assessment changes. In the long term, inflation has a positive effect on the interest rate spread. Over time, persistent inflation might lead to a more cautious approach by banks, widening the spread to hedge against inflation risk and to maintain the real interest margin. This is reflective of the cost of carry in the transmission mechanism, where sustained higher inflation can lead to increased costs for lenders, which they offset by raising lending rates more than deposit rates.

Money Supply: The money supply has a significant negative impact on the interest rate spread in the short run. An increase in the money supply typically leads to lower interest rates as more funds are available in the banking system. In the immediate term, this can reduce the interest rate spread as banks may lower lending rates to encourage borrowing, while deposit rates may not fall as quickly due to competitive pressures and existing rate agreements. In the long run, the relationship between the money supply and the interest rate spread is negative but not statistically significant. Over time, the effect of money supply on spreads seems to diminish or become uncertain. This may be because other factors come into play that influence the spread, such as changes in borrowers' risk profiles, banks' risk management strategies, and the overall economic context in Uganda. The disparate short- and long-term effects highlight the complexity of Uganda's financial system.

For example, while changes in the policy rate set by the central bank may not immediately impact bank behavior, over time, strategic adjustments might have a significant impact on spreads. Additionally, the unique reactions to inflation in the short and long term suggest that banks and consumers respond differently over various time horizons. In Uganda, where the economy might be sensitive to inflation and liquidity conditions, such dynamics emphasize the importance of a cautious and forward-looking monetary policy. In conclusion, the rediscount rate, inflation, and money supply each have distinct and nuanced impacts on the interest rate spreads in Uganda, with the effects varying in the short and long run. Policymakers and financial institutions should account for these temporal differences when designing and implementing monetary policies. Recognizing the lag in the transmission mechanism is crucial for anticipating the broader economic consequences and for effective financial stability oversight.

Policy Recommendation: Gradual Adjustment of the Rediscount Rate: The evidence suggests that immediate adjustments to the rediscount rate have minimal impact on the interest rate spread in the short term, but significant effects are observed in the long term. This implies that rapid changes to the rediscount rate might not immediately influence banks' lending and deposit behaviors but lead to a wider interest rate spread over time due to adjustments in the cost of borrowing. Therefore, it's recommended that the Central Bank adopt a policy of gradual and transparent adjustments to the rediscount rate. This approach allows for smoother transitions and provides banks with the time necessary to adjust their lending rates in a manner that is more aligned with the central bank's policy objectives. A gradual adjustment policy could mitigate potential market disruptions and ensure that the monetary policy transmission mechanism operates more effectively. In the Inflation Targeting Framework, the connection between inflation and the interest rate spread is complicated, having a notable detrimental influence in the short term and a beneficial effect in the long term. This dichotomy underscores the importance of managing inflation expectations through a clear and robust inflation-targeting framework. By setting explicit inflation targets and being transparent about the measures to achieve these targets, the Central Bank can help stabilize the financial market's response to inflationary pressures. Such a framework would enable banks to anticipate inflationary trends and adjust their lending and deposit rates, accordingly, minimizing the volatility of interest rate spreads. An effective inflation-targeting regime would also enhance the credibility of the Central Bank, fostering a more stable economic environment conducive to growth.

Monitoring and Management of Money Supply: The significant negative impact of an increased money supply on the interest rate spread in the short term, and its uncertain long-term effects, highlight the need for vigilant monitoring and management of liquidity in the banking system. The Central Bank should employ a set of tools designed to adjust the liquidity in a manner that ensures a balanced money supply, thus preventing excessive short-term fluctuations in interest rates while maintaining stable interest rate spreads over the long term. Active liquidity management would also allow the Central Bank to respond more effectively to external shocks and changing economic conditions, ensuring that the banking sector remains resilient and supportive of economic growth.

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From Realizable Dreams to Sustainable Reality: An Empirical Study on the Relationship between Internship Experience and Future Career Prospects among Business Students

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Abstract: The objective of this study is to establish the relationship between Internship Experience and Future Career Prospects among Business Students at Mbarara University of Science and Technology. Using a quantitative approach and a cross-sectional survey design, data was gathered from 100 alumni. Using an open-ended questionnaire, Mbarara University of Science and Technology business students' internship experiences and future career prospects were surveyed quantitatively. In addition, a conventional linear regression analysis was performed. The study's findings demonstrated that among the Mbarara University of Science and Technology's business students, internship experience had a strong positive and significant influence on their future career prospects. The study relates to the ongoing discussion about how business students' internship experience influences their chances for future employment.

Keywords: *Internship Experience, Future Career Prospects and Business Students.*

1. Introduction

In Business schools nowadays, internships are considered essential parts of higher education and are no longer considered an accident (Beard & Wilson, 2013). Although there is no official definition for the term, internships are typically believed to be short, practical work experiences, where students receive training and experience in a particular industry or career area of their interest (Zopiatis, 2018). The idea behind the focus placed on internships as credit units in university curricula is that learning should be grounded not just in lecture-based pedagogies but also in practical experience gained in a real-world work environment. According to the principle of experiential learning, learning is the process by which knowledge is formed by transforming experiences (Kolb, 1984). In this regard, understanding and transformation of experience combine to produce knowledge. Besides, through real-world experience and reflective practice, the learner acquires new knowledge. Internships enable students to access a supportive and useful learning environment that allows them to explore the real world. Furthermore, by exposing students to both the positive and negative parts of the workplace, internships aid in their understanding of the realities of professional dedication.

Insightful information regarding one's potential for the desired career may also be provided by the evaluation of one's strengths and weaknesses that professionals in the industry can provide. A two-way screening procedure that evaluates the appropriateness of both the students and the industry experts is often what makes internships unique. The student's resume's experience is enhanced through an internship, and this helps in overcoming entry-level challenges, thus making the priceless work experience serve as a springboard for a career (Schwartz, 2010). Moreover, internships enable students to learn beyond what they would have learned in a traditional classroom setting, by giving them a sense of the overall professional environment and fostering their ability to communicate and interact with others(Cheong, 2014). It is believed that students exposed to internships receive job offers earlier than others and have better career preparation(Gault, 2017). Consequently, it was imperative to examine the association between internship experience and future career prospects among Business students at Mbarara University of Science and Technology. It is believed that internships are essential for giving students real-world experiences, in addition to their academic studies.

Students also receive practical work experience and learn how to apply theoretical concepts to real-world issues. Moreover, academic preparation, remuneration, on-the-job challenges, autonomy, and the working environment are the key aspects of internship experience that, according to empirical studies, are crucial indicators of interns' future career prospects. However, research on the internship landscape for Business students in Uganda is scanty. It is strongly believed that developing a deeper understanding of how internship experience influences future career prospects among Business students at Mbarara University of Science and

Technology would be a cornerstone of enhancing students' chances for future employment. Consequently, the study's conclusion will help Ugandan universities and those in comparable environments to better coordinate their internship programs to increase students' employability.

2. Empirical Literature Review

Internship experience is considered a key driver of future career prospects as it enables students to learn beyond what they would have learned in a traditional classroom setting, thus shaping their overall professional environment and future career prospects(Cheong, 2014). The study results support the findings by Jawabri (2017), which indicate that internship experience and job prospects among UAE business students are positively and significantly correlated. According to that study, internships are seen to be crucial in helping students supplement their academic coursework with real-world work experience. Similarly, Sadia (2020) found that internship programs had a favorable and noteworthy effect on Pakistani Business students' professional and personal growth. Also, (Gault, 2017) argues that students who have undergone internships receive job offers earlier than others and have better career preparation. These revelations are confirmed by the study by Galbraith and Mondal (2021) where internships are considered drivers of career connections and networking opportunities; where students who succeed with internships are offered 1st full-time jobs with the same organization. Thus, effective internships lead to better career transition decisions among students as it helps them to realize their choice of major and subsequent career choices in the future (Galbraith and Mondal, 2021). Likewise, by embarking on internships, the student's career choices are shaped by obtaining a better idea about the skills required for the jobs (Galbraith and Mondal, 2021).

Subsequently, Baert et al. (2021) argue that students with internship experience obtain invitations to job interviews than those without such experience. Therefore, employers attach more value to students with internship experience than to students without such labor market experience (Baert et al., 2021. Whereas the above studies are in support of internship experience as a key influencer of the student's future career prospects, the study by Karakirazi, Ustunday, Koratas & Ozdemir (2021) revealed contradictory findings, thus, suggesting an ongoing debate. The aforementioned study makes the case that most students attempt to complete internships that align with their career ambitions since they already have predetermined professional goals regarding the field in which they want to work. Because some students' professional ambitions remain the same following their internship experience, the study found a negative and significant impact on their career prospects. Thus, the current study is aimed at contributing to the ongoing debate on the association between internship experience and future career prospects among Business students. The following hypothesis was developed based on the examined empirical studies on the internship experience and future career prospects among Business students:

Ho1: *There is no statistically significant relationship between Internship Experiences and Future Career Prospects among Business Students at Mbarara University of Science and Technology.*

3. Methodology

A cross-sectional research design was used to examine the relationship between the study variables under investigation (Pallant, 2020). Also, a quantitative research approach was adopted to test the study hypothesis (Field, 2009). The sample size of one hundred alumni was chosen by applying the 1973 Taro Yamen formula, which governs sample selection. Additionally, the closed-ended questionnaires were used to gather data from the alumni by utilizing a simple random sampling strategy. The study variables' strength and direction of relationship were determined by standard linear regression analysis, as shown by R-squared and R, respectively (see Table 2). Internship experience items were measured in terms of academic preparedness, compensation, working environment, self-initiative and on-the-job challenges (Jawabri, 2017; Huang, 2019). Also, the questionnaire's five-point Likert scale was used to anchor all the categories related to the internship experience, which was consistent with a study by Kamukama and Natamba (2013) that used the same scales: 1 = Strongly disagree; 2 = Disagree; 3 = Undecided;4 = Agree; 5 = Strongly agree. Data was analyzed using both inferential and descriptive analysis techniques. To list the demographic characteristics of the respondents, frequency distribution analysis was one of the descriptive methodologies used. Furthermore, the type and degree of the association between different aspects of the internship experience and future career prospects were ascertained by inferential statistics analysis.

4. Results

Demographic Characteristics

Table 1: Distribution by Demographic Characteristics of Business Students

Category	Item	Frequency	Percent
Gender			
	Male	77	53.1
	Female	68	46.9
Age			
	Below 30 years	137	94.5
	30-34 years	6	4.1
	34-38 years	1	0.7
	Above 38 years	1	0.7
Course			
	BBA	40	27.6
	BSAF	38	26.2
	ECO	9	6.2
	BPSM	58	40
Nature			
	Paid	18	12.4
	Unpaid	127	87.6
Duration			
	1 week	3	2.1
	2 weeks	2	1.4
	3 weeks	2	1.4
	4 weeks	15	10.3
	6 weeks	123	84.8
Location			
	Central	8	5.5
	Northern	4	2.8
	Western	126	86.9
	Eastern	7	4.8
	Total	**145**	**100**

Source: Primary data, 2023.

Based on the demographic characteristics results exhibited in Table 1, the majority of the respondents (53.1%) were male, implying a fair gender balance. Additionally, the biggest number of the respondents (94.5%) were 30 years and below, implying that they were in their youthful period. Also, a bigger portion of the respondents were of Bachelor of Science in Procurement and Supply Chain Management (40%), followed by BBA (27.6%).

Regression Analysis Results: Standard linear regression analysis was performed using the model of best fit to determine the direction and intensity of the association between internship experience and future career prospects. The results are shown in Table 2.

Table 2: Regression Analysis Results

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.004	0.37		1.225	0.006
	Internship Experience	0.327	0.089	0.272	3.665	0.000
R	.610a					
R Square	0.372					
Adjusted R Square	0.363					
F	42.11					
Sig.	.000b					

a. Dependent Variable: Future Career Prospects

Table 2 of the study's findings shows a substantial, positive, and significant link between internship experience and future career prospects among business students at Mbarara University of Science and Technology (R = 0.61P = 0.000). This implies that a greater proportion of internship experience is related to future career prospects. Thus, the hypothesis that states that there is no statistically *significant* association between internship experience and future career prospects among business students at Mbarara University of Science and Technology Uganda, H01, is hereby rejected. Besides, 36.3% of the variation in future career prospects is explained by internship experience, while 63.7% of the variation is explained by additional variables that this study did not examine. Furthermore, according to the beta coefficient (B = 0.272), for each unit of internship experience, future career prospects among business students increase significantly by 0.272 units. Consequently, the overall model fitness was significant since its significant level (0.000) was less than 0.05 (Pallant, 2020).

Discussion: Table 2 presents the study's findings, which show a strong, positive correlation between internship experience and future career prospects among business students at Mbarara University of Science and Technology (R = 0.610, p = 0.000), consequently, contrary to hypothesis H01. Additionally, the beta coefficient (B = 0.272) indicates that internship experience has a substantial impact on the variation in the future career prospects among business students at Mbarara University of Science and Technology. Besides, the study findings imply that 36.3% of the variation in the future career prospects was as a result of internship experience. The study results conform with empirical studies by scholars (Jawabri,2017; (Gault, 2017); Galbraith and Mondal, 2021) that indicated a positive and significant link between internship experience and future career prospects. The study findings suggest that when there is an effective working environment, academic preparedness, compensation, self-initiative and on-the-job experience, we expect better future career prospects among business students.

Managerial Implication: According to the study's conclusion, management must implement a successful internship program if it hopes to improve students' prospects for future employment. The Universities should ensure that an effective working environment, academic preparedness, compensation, self-initiative and on-the-job experience are put into place.

Theoretical Implication: The study's findings are consistent with the empirical literature regarding the benefits of internship experience. Furthermore, while numerous empirical studies have been carried out to ascertain the correlation between internship experience and future career prospects among business students (Jawabri, 2017; Gault, 2017; Sadia, 2020), no single empirical study has been done to determine the relationship between internship experience and future career prospects among business students in Uganda, and more specifically among business students at Mbarara University of Science and Technology. As a result, this effort has closed the empirical gap. The experiential learning theory, which Kolb proposed in 1984 and contends that experience is the source of knowledge, is valued in this study. The same theory further proposes that through the combination of grasping and transforming the experience, knowledge is generated, thus in

support of internship experience. It is believed that self-reflection by students empowers them to take charge of their learning and enables them to make connections to launch their academic journey.

5. Conclusion and Recommendations

The current study focused on examining the link between internship experience and future career prospects among business students at Mbarara University of Science and Technology. The direction of internship experience's influence on future career prospects was hypothesized based on the empirical literature assessment, which examined internship experience as a driver of future career prospects. The study hypothesis leads to the conclusion that among Mbarara University of Science and Technology's business students, internship experience has a strong, positive, and significant impact on future job prospects. It is clear that implementing successful internship programs could improve business students' chances of finding employment in the future. Management should put into place effective internship experience mechanisms to enhance the future career prospects of students. This could be through putting into place an effective working environment, academic preparedness, compensation, self-initiative and on-the-job experience, as these are considered key drivers of internship experience.

Areas for Future Research: This study focused on business students at Mbarara University of Science and Technology. A similar study could be conducted among students of engineering and agriculture where industrial training takes center stage. This would ease the understanding of how industrial training experience has shaped the future career prospects of engineering and agriculture students and in the Ugandan context.

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Financial Innovations and Profitability of Commercial Banks in Uganda

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Abstract: The purpose of this study was to examine the relationships between financial innovation and profitability of commercial Banks in Uganda. The study was prompted by the low profitability evidenced by some banks being closed down because of low profitability. The study adopted a cross-section and descriptive research design using Roscoe 1975 to get a sample size of 24 commercial banks. Self-administered questionnaires were used to collect the responses. Based on the goals of the study, the data was examined for validity and reliability, examined using SPSS, and the results were reported. The results showed that the profitability of commercial banks in Uganda had a positive and significant association with both process and product innovation, suggesting that improving one will benefit the other. However, product innovation was found to be a stronger predictor of profitability in commercial Banks in Uganda. With these findings, the study contributes to providing empirical evidence that financial innovation in commercial banks is highly influenced by commercial banks introducing and improving their products/services since it results in profitability. There is also a need to put much emphasis on Financial Innovations by continuously introducing and improving on the existing products/services. The Commercial Banks in Uganda should promote and appreciate Financial Innovations as they are vital not only in enhancing cost minimization, thus improving profitability

Keywords: *Financial innovations, profitability, commercial Banks in Uganda*

1. Background of the Study

The commercial sector, particularly commercial banks, plays a decisive role in the development of an economy. They act as custodians of the wealth and resources of a country, which are necessary for a nation's economic development (Harper & Chan, 2003). They act as financial shock absorbers by providing emergency liquidity in the form of credit and overdrafts to many businesses and households (Chiu, Kokkinis & Miglionico, 2021). They provide financing to businesses, governments and even households, thereby contributing to economic growth and development (Alkhazaleh & Almsafir, 2014; Ji et al, 2021). Despite their contribution to the overall economic growth of all economies, commercial banks have gone through turmoil since the 2008 financial crunch, the sector has continuously faced financial performance setbacks informed of low profitability, liquidity challenges and non-performing loans which have seen several commercial banks close Singh, Basuki, & Setiawan, 2021). The Federal Deposit Insurance Corporation (FDIC) closed 465 failed banks from 2008 to 2012 in the USA alone, in contrast to the five years before 2008, when only 10 banks failed (FDIC.gov, 2020) arousing a global debate. The survival of commercial banks is highly leveraged on their profitability (Obadire, Moyo & Munzhelele, 2022).

According to Jihadi et al. (2021), profitability is a subjective indicator of a company's ability to create income, operate profitably as a going concern to expand, and respond to opportunities and dangers in the external environment. The overall success of Commercial Banks is seen in their profitability which is a necessary condition for their survival (Tangngisalu et al, 2020). Several authors have investigated the factors influencing profitability among commercial banks and one of them is financial innovation (Al-Dmour, Al-Dmour & Rababeh, 2020).

The profitability of commercial banks has also been associated with Financial Innovations (Aduda & Kingoo, 2012). A key element of economic activity for several millennia, financial innovations are at the center of the debate on how to shape the future global financial system (Saksonova & Kuzmina-Merlino, 2017). Financial innovation is the act of creating and then popularizing new financial instruments, as well as new financial technologies, institutions, and markets (Irungu, 2014). Financial innovations are powerful strategic tools that commercial banks employ to stay competitive and enhance their performance (Ibekwe, 2021). They also help them cut expenses associated with providing other financial services (Nofie, 2011). To break down and

repackage various financial risks, the majority of commercial banks are investing substantial sums of money in ICT and financial innovations (Guo & Liang, 2016). (Hamilton, Jenkinson, & Penalver, 2007). Whether the anticipated financial gains can be realized is a crucial topic regarding business investment in innovation today.

Financial Innovations, particularly Process and Institutional innovations, also improve Credit Risk Management through real-time data processing, reporting, and monitoring to enhance overall risk-management capabilities (Ganguly et al, 2017; Juan, Antonio & Bahillo, 2016). They also enable efficient data management and integration of new data sources, offer greater transparency to risk profiles of current and prospective borrowers and offer better insights for credit decisions which ultimately lead to sound commercial banks' profitability (Brookes, 2016).

In Uganda, Commercial Banks continue to grapple with performance setbacks (Kessey, 2015). Recent statistics indicate a rise in the Non-Performing Loan portfolio rate (NPLR); and a fall in Return on Equity (ROE) as well as Return on Assets (ROA) (Bank of Uganda report, 2021). This is evidenced by the rise in the ratio of non-performing loans from 4.0% in June 2020 to 7.4% in June 202021 For example, four banks were closed between September 1998 and May 1999 for poor financial performance (Habyarimana, 2003). National Bank of Commerce was closed by BoU in 2012 to protect depositors' interests and maintain financial stability (Kasekende, 2014). Global Trust Bank was closed in July 2014 because of accumulated losses of up to Ushs 60 billion (BOU report, 2019) and in October 2019, BoU took over Crane Bank because NPLs had eroded capital; the NPLs had grown from Ushs 145 billion in December 2021 to almost Ushs 200 billion by October 2016 (BOU report, 2020/2021). These challenges could be attributed to inappropriate Financial Innovations.

2. Literature Review

Product Innovations and Profitability of Commercial Banks: Product innovation is divided into two categories of innovations: radical innovation which aims at developing a new product/service/idea, and incremental innovation which improves existing products/services/idea (Hoang, 2010). Antonnet (2014) suggests that banks should first understand all bank-related customer needs and then evolve a comprehensive product package that covers the entire range of these needs a product should be focused on the local market; that a bank's product policy should be localized by taking into account regional quirks. According to her, if a bank offers a customized product, it will instill a sense of psychological ownership in the consumer, which will sustain profitability and lead to customer retention. The introduction of new credit, deposit, insurance, leasing, hire purchase, derivatives, and other financial products including e-banking, investment, and retail banking are among the different facets of product innovation in banks, according to Anand & Mantrala (2019). They contend that the introduction of these products is intended to increase efficiency or better adapt to shifts in consumer demand. Commercial banks use product innovation as one of their competitive tactics, and it significantly increases their profitability.

Barbu et al. (2021) claim that product innovation arises from developing a novel approach to resolving a customer's issue, which ultimately serves the interests of banks and customers alike. Innovation in goods and services suited to particular markets and requirements is fueled by both internal and external forces. Market research, bank-to-bank exchanges of new product ideas, and technical advancements are examples of significant external forces. Internal considerations may include internal product development, employee and consumer feedback, and the monitoring and assessment of current products (Sok & O'Cass, 2015). According to Qi, Boyer, and Zhao (2009), products go through different stages in their productive lives, such as invention, maturity, and decline stage, creating a distinct cycle in the product life. This is similar to what happens to any living thing. Like any other living thing, the products deteriorate and eventually perish if they are not continuously improved. Creating a unique solution to a customer's problem leads to product innovation. He argues that if businesses hope to maintain profitability and growth, product innovations should be a constant and intentional strategic strategy (Maclean et al, 2021). These tactics could include ways to present the product differently, make adjustments, and introduce new ideas altogether (Kamakia, 2014). If commercial banks want to stay profitable and relevant, they must innovate their products (Chen, You, & Chang, 2021). Private businesses called Credit Reference Bureaus (CRBs) gather databases that prospective lenders can access to assist them in reviewing, analyzing, and assessing a customer's credit application. They give prospective lenders access to an applicant's credit history by generating a "credit report" that includes information about

the applicant's payment and credit history, financial accounts and how they have been handled, and other details of interest to the credit industry (Bussmann et al, 2021).

Since credit reference bureaus help lower the amount of non-performing loans, all banks and other lending organizations, including those in the agricultural and industrial sectors, should utilize them to reduce the number of repeat defaulters. Consequently, this lowers bad debt provisioning and write-offs, increasing bank profitability (Babu & Oyaro, 2018))

In Wairimu & Omagwa (2020) research, "The Effect of Credit Reference Bureaus, Non-Performing Loans on Profitability of Commercial Banks in Kenya," it was discovered that a significant portion of the credit extended by Kenya's banking industry has been secured by tangible assets like real estate and buildings, along with the associated evaluation expenses. To increase bank profits, banks have locked out interest income and commissions that would otherwise accrue from these decent borrowers and payers, particularly those from the informal sector and SMEs without access to such collateral.

According to Migwi (2013) in his study on Credit Monitoring and Recovery Strategies Adopted by Commercial Banks in Kenya, the use of CRBs generates information collateral that commercial banks can rely on to lend to those well-paying customers who would otherwise be prevented from borrowing due to a lack of tangible collateral. Overall, the banks' profitability is increased by utilizing the interest money and commissions that these creditworthy borrowers—who would otherwise be denied credit—will generate.

Dankwah (2012) suggests that commercial banks and their regulators use CRBs to facilitate credit information sharing in their paper, "The Relevance of Credit Reference Bureau and its Effect on the Financial Industry in Ghana." This will make it possible for borrowers to establish a history—also known as collateral or reputational capital—that they can utilize to obtain loans. This is particularly important for borrowers in small and medium-sized businesses (SMEs) and informal sectors that have a solid performance history and rely on their reputational capital to obtain financing. This will increase the profitability of banks.

Another innovation in financial institutions is agency banking. It entails using engaged agents operating under a legitimate agency agreement to provide limited-scale banking and financial services to the underserved population as opposed to using tellers or cashiers. On behalf of a bank, the proprietor of an outlet handles banking transactions. These merchants, or agents, are being used more and more on a global scale as crucial financial inclusion distribution channels (Simboley, 2017). Because of agency banking's advantages, banks can grow without having to "break the bank." Since over 80% of adults in developing sub-Saharan Africa lack access to banking, banks have a clear need and potential to employ agents to grow their companies take back significant market share from telecommunications and connect with the underprivileged (Gitau, 2014). Ndung'u (2014) discusses how agency banking has improved many people's lives in underdeveloped nations despite its adoption's difficulties. In addition to providing bank customers with convenience, agency banking has evolved into a means for lenders to raise low-cost deposits with minimal overhead.

According to Nyaboga et al. (2012), agency-banking services draw the attention of criminals. The study examines the impact of agency banking on entrepreneurs in Kisii County, Kenya. Customers become suspicious of these bank employees and lose faith in them as a result of this. As a result, they start to choose which of these agents to deal with, which has an impact on how profitable commercial banks can be. Infrastructure expenses and security have a major influence on the profitability of commercial banks that can be linked to agency banking, according to Aduda, Kiragu, & Ndwiga, (2013) examination of the impact of agency banking on commercial banks' profitability in Kenya. She suggested that while implementing agency banking, security precautions, such as a risk-based approach, be given more consideration. Commercial banks should thoroughly vet their agents to make sure that big-ticket transactions are handled on their behalf; real-time, secure operating systems are available for such transactions; Data integrity and confidentiality are protected, and an audit trail can be created (Aduda, Kiragu, & Ndwiga, 2013).

According to Aduda and Kingoo (2012), the primary goal of all commercial banks is to boost profits by growing their branch network to reach a large number of their current and future clients who live in rural areas with restricted access to banking services. Commercial banks have entered rural areas through Agency Banking,

where it would otherwise be prohibitively expensive for them to directly participate in providing banking services. This is especially true in rural areas where transaction volumes and numbers are insufficient to cover the cost of a branch. Low-income clients also tend to feel more at ease banking at their local store rather than traveling to a faraway branch, which allows the bank to collect the income these customers give at a lower cost (Dawley, 2021). Mobile banking is another breakthrough in financial institutions. Koenig-Lewis, Palmer, and Moll (2010) define mobile banking as a system that lets customers of a financial institution use a mobile device—like a smartphone or personal digital assistant—to conduct a range of financial operations.

There is no distinction between mobile banking (also known as M-banking) and mobile phone banking. Mobile banking services include the ability to manage accounts, transact in the stock market and banks, and access tailored information such as balance inquiries, account statements, check statuses, checkbooks, fund transfers between accounts, and more (Karjaluoto et al, 2021). Therefore, mobile banking is not the same as mobile payments, which are similar to using a debit or credit card to make an EFTPOS purchase and entail using a mobile device to pay for products or services at the point of sale or remotely.

There is now a greater level of connection between mobile banking and back-end core banking systems because mobile banking is seen as the "fifth channel" of banking, existing independently of online banking. As a result, banks have developed methods to draw in new clients and hold on to their current clientele, both of which could increase revenue (Ngumi, 2014). Financial institutions' adoption of mobile banking is crucial for enhancing the financial adequacy of commercial banks as well as for improving operations and lowering costs over time, all of which increase profitability, according to Mwange's (2014) discourse on mobile banking and the profitability of commercial banks in Kenya. Simplice (2012) asserts that mobile banking increases the number of channels a bank can employ to provide its services, improving operational effectiveness and preventing losses and costs associated with delayed client order fulfillment. Furthermore, a positive reputation for the company's logistical capabilities might lead to the creation of new orders. This is improved by mobile banking, which offers access to banking services at any time and from any location. It also makes push and pull services available for quick transactions. In terms of increased market share, increased banking penetration, customer satisfaction, customer loyalty, expanded product range, customized products, better response to client demand, lower operating costs, and meeting government service obligations, Wishart (2006) and Mwange (2011) lend that the use of M-Banking can contribute to improved bank performance. M-banking is still employed as a strategic instrument that affects the income structure of banks since profitable strategies that are successful in growing their clientele and retaining them are ultimately more profitable.

A study conducted by Gakure and Ngumi (2013) explored the relationship between financial innovations and the profitability of commercial banks in Kenya, revealing that bank innovations had a statistically significant effect on bank profitability. Nyathira (2012) similarly examined the relationship between financial innovation and profitability within Kenyan commercial banks. The results indicated that financial innovation had a positive correlation with profitability, particularly in the context of commercial banks. Despite the acknowledged significance of financial innovations and the wealth of descriptive literature on the subject, surprisingly little empirical research has been done. Owing to this situation, the banks have been denied access to vital information on this important field of financial innovation, which periodically results in the reversal of the relationship between innovation and performance. The influence of financial innovations on bank profitability in Uganda has not been thoroughly examined, which is why this study is necessary to address the gap.

Process Innovations and Profitability of Commercial Banks: Process financial innovations, such as digitization or business process automation (BPA), are the technologically enabled automation of tasks or services to complete a certain task or workflow. To cut expenses, resources, and investments, it is a method of managing information, data, and procedures. By using computer technology to automate important company operations, BPA boosts productivity (Ngugi & Karina, 2013).

According to a PwC and Strategy& consumer survey conducted in the United Kingdom, there is a big discrepancy between what customers want and anticipate from banks and what they want. They discovered that consumers, particularly SMEs, favored conducting the majority of their banking on mobile and Internet platforms. The largest difference between preferred and real online banking services was seen in the financing

and credit domains. Instead of visiting a bank branch, more than 30% of SMEs stated they would prefer to be able to apply for and receive loans online (Bitetto et al., 2024). The Association for Information and Image Management (AIIM) said in its 2014 white paper, "Automating Credit Processes," that small and medium-sized businesses are increasingly using nonbanks for loan access, payment processing, and transaction management. And SMEs will have even more incentives to start adopting these alternative services as they acquire traction and develop over the coming few years. They advised banks to start putting more effort into meeting consumer wants if they want to stave off competition from both established financial technology firms and other banks that have made a more forceful entry into the digital era. Banks should be able to reduce their operating expenses by handling more transactions automatically and in real-time as a result of a step toward digitization (AIIMWhitePaper, 2014). Capgemini Consulting Group UK and MIT in Boston investigated the strategies and tactics (both internal and external) that successful businesses are implementing to achieve successful digital transformation. Their findings suggest that banks should develop the digital end-to-end execution of transactions that is at the core of digital banking, with the hope that their rewards will partially manifest as lower operating costs (Capgemini Consulting Group, 2017). To operate with fewer staff members and provide fewer in-person services, they advise banks to automate their business processes, particularly credit. This will free up resources that the banks can use to either offer higher-value advisory services or reduce their cost basis. While digitizing credit risk protects bank revenue and may reduce leakage by 5 to 10 percent, automating credit operations and digitizing the critical steps in the credit value chain can result in cost savings of up to 50 percent (Kelly, 2014).

According to Busby (2017), there should be far more advantages to digitizing banking business processes than just cost savings. These advantages include increased customer satisfaction, higher rates of client retention, and higher revenues per customer. If the transformation is not completed, banks may find it difficult to retain profitable customers, particularly small and medium-sized enterprise (SME) borrowers. These customers, who make up 20% of the bank's clientele and account for 80% of its profitability and survival, may soon be walking out the door with a leg, an arm, or even their entire body. Another process of financial innovation is Internet banking, which is the act of a bank providing its services to customers via the Internet as a channel for the delivery of a variety of value-added goods and services to bank customers (Nielsen, Bukh, & Mols, 2000).). Online banking is another name for it (Gerrard & Barton Cunningham, 2003). It enables people to conduct financial operations from their homes, offices, or over the Internet. Customers can complete any normal transactions using Internet banking that they cannot complete through traditional banks, including account transfers, balance inquiries, bill payments, stop-payment requests, loan repayments, and online loan applications (Raza et al., 2020). While some Internet banks are solely online and do not have a physical location, others are traditional banks with online banking as well (Singh & Srivastava, 2020).

Both consumers and banks benefit from Internet banking since it increases the effectiveness of the services provided to them. It is economical and practical. Furthermore, the growth of Internet banking has changed the banking industry's distribution channel structure (Salem, Baidoun, & Walsh, 2019). Singh (2019) asserts that Internet banking significantly boosts bank profitability and ignites competition in the banking industry. Applications for online banking push banks toward technical advancements that lead to increased productivity and profitability (Naeem, 2020).

According to Chedrawi, Harb & Saleh (2019), the effectiveness of online banking has a beneficial influence on banks' profitability because it can lower transaction costs by 40 to 80% compared to traditional branch banking. The typical operating costs and overhead physical expenses incurred by the banks are decreased by the costs of Internet banking services internet banking lowers the banks' operational risk (Ciciretti et al., 2009) and improves the quality of their assets, which directly raises operational profitability and return on equity (ROE) (Madugba et al., 2021). Nduta & Wanjira (2019) claim that because of the advancements in electronic infrastructure, using online banking has a cheaper cost per transaction than traditional banking.

According to Nejad (2022), banks that use Internet banking services extensively are categorized as "innovative" because of their higher distribution channels and lower costs compared to the sector average. High-education consumers demand Internet banking more than regular consumers do (Sullivan, 2000). Despite their smaller number, internet banking has had a positive impact on the profitability of banks that have used it.

The adoption of online banking has increased the profitability of the banking industry, according to the findings of his study on the effect of Internet banking on the profitability of financial institutions in Kenya. This can be linked to increased profitability, efficacy, and efficiency (Kaur, 2021).

Another breakthrough in banking processes is the automated teller machine (ATM). ATMs are the most well-known devices that give consumers electronic access, and their primary purpose is to carry out the bank's primary function. A plastic card with unique properties is used to operate ATMs (Milne, 2006). According to Olatokun and Igbinedion (2009), the plastic card is taking the place of checks, in-person customer attendance, restricted banking hours, and paper-based verification, all of which slow down the customer care process.

Using a plastic, chip, or magnetic-stripe card and a Personal Identification Number (PIN) that has been issued by the financial institution, Bank clients can now carry out several banking tasks, such as taking money out of their accounts, checking their balances, transferring funds between accounts, and purchasing prepaid mobile phone credits (McAndrews, 2003).

3. Methodology

Research Design: To comprehend the link between the variables as stated in the research objectives, a cross-sectional, quantitative survey approach was employed in this investigation. The cross-sectional survey method was selected due to its affordability and ability to collect a substantial amount of data quickly. Self-report surveys are frequently used to collect data, allowing the researcher to compile a sizable amount of data from a sizable participant pool. However, it also allows the researcher to gather information on a variety of other factors to examine potential correlations between the important variables of interest and variations in sex, age, income, and educational attainment (Sekaran, 2006).

Study Population and Sample Size Determination: The study population comprises 25 commercial banks in Uganda (Bank of Uganda, 2022). A major focus was on the head offices of these banks; by default, these are all located in Kampala. Based on the given population. A sample size of 24 commercial banks determined using the Krejcie and Morgan (1970) table for sample size determination was utilized in this study. Seven (4) respondents were selected per bank to fill out the questionnaire. These included the head of operations, manager, head of Business Development and head of Business Technology departments.

Operationalization and measurement of variables: The study variables were operationalized and measured using questionnaire items developed and tested by previous scholars. These are detailed in the table:

Table 1: Operationalization and Measurement of variables

Global variable	Definition	Dimensions	Measurement	Sample items
Profitability	Profitability a subjective measure of how well a business entity can use assets from its primary mode of business to generate revenues, perform efficiently as a going concern to achieve growth and be able to react to environmental opportunities and threats (Gilbert & Wheelock, 2007)	⇒ROA ⇒ROE ⇒NIM	Respondents rank 3 items included in the questionnaire on a five-point Likert scale.	*Level of ROA *Level of NIM *Level of ROE
	Financial Innovation involves the introduction of new financial products/services for the existing market, for the new	Product Innovations Process Innovations	Respondents rank 24 items included in the questionnaire on a five-point Likert scale.	* In the last three years, the bank has introduced the following products/services:

Financial innovations	market and a new process of delivering financial services	Mobile Banking Agency Banking Small scale Business Accounts * In the last three years, the bank has introduced new delivery or distribution methods for the following products/services: E-Banking Electronic funds transfer Small scale Business loans

4. Results of the Study

Demographic Characteristics of the Respondents: Respondents were requested to furnish details about their demographic profile, encompassing gender, age, education, degree of education, and duration of current employment.

Table 2: Characteristics of the respondents

Categories	Items	Frequency	Percent	Valid Percent	Cumulative Percent
Gender	Male	44	50.6	50.6	50.6
	Female	43	49.4	49.4	100.0
Age	25-29	6	6.9	6.9	6.9
	30 -34	20	23.0	23.0	29.9
	35-39	29	33.3	33.3	63.2
	40-44	22	25.3	25.3	88.5
	45-50	10	11.5	11.5	100.0
Level of Education	Degree	68	78.2	78.2	78.2
	Masters	19	21.8	21.8	100.0
Number of years in the present position	Less than 2 years	3	3.4	3.4	3.4
	2-5 years	35	40.2	40.2	43.7
	5-10 years	41	47.1	47.1	90.8
	11 years and above	8	9.2	9.2	100.0
	Total	87	100.0	100.0	

Source: Primary data

The results in Table 2 indicate that the majority of the respondents were male (50.6%) and women (49.4%). This implies that commercial banks are gender sensitive since the number of women is almost equal to the number of men in those higher positions and this improves the effectiveness of the bank and thus increases the performance of the bank. Concerning the age bracket of the respondents, the results indicate that the majority

of the respondents were between the age bracket of 35-39 years (33.3%), these were followed by those between 30-34 years (23.0%) and the least group had between 45-50 (11.5%). This implies that banks employ young energetic workers who are in a position to execute their duties well and this improves the overall performance of the bank.

The results also indicated that most of the responders (78.2%) were followed by master's degree holders (21.8%). This implies that the bank employees well knowledgeable workers who come and execute their duties well while applying different knowledge acquired while at school and this helps them in making informed decisions which improves the performance of the bank.

Finally, concerning the number of years employees had spent in their current positions, The results show that most of the responders had spent 5-10 years (47.1%), these were followed by those who had spent 2 to 5 years (40.2%) and the least group had spent less than 2 years (3.4%). This implies that employees have spent enough time in their current position and this increases their ability to judge well and make well-informed decisions based on their experience and this improves their performance.

Bank characteristics: The bank characteristics were distributed as indicated in Table 3

Table 3: Bank characteristics

Categories	Item	Frequency	Percent
Age of the bank	5-10years	4	34.8
	11-15years	4	34.8
	15yrs and above	15	59.4
Number of Branches in a country	Less than 20	10	45
	20-30	5	21.4
	31-50	3	13.7
	More than 51	5	19.9
	Total	23	100

The results in Table 4.2 indicate that the majority of the banks had spent 15 years and above in operation (59.4%), these were followed by those that had spent 11-15 years and 5-10 years (34.8%). This is an indicator of improved profitability and sustainability in the business.

The majority of the banks, according to the results, had less than 20 branches (45%), these were followed by those which had between 20-30 branches (21.4%) and the least ones had 31-50 branches (12.7%). This implies that most banks have been growing steadily and their revenues have increased, they increased the branches to serve more customers.

Pearson Correlation: The degree of linear correlation between the research variables was assessed using Pearson's correlation analysis, which is represented by the letter r. The Pearson correlation coefficient, known as r, ranges from +1 to -1. A value of 0 suggests no correlation exists between the two variables. A value above 0 signifies a positive correlation, indicating that as one variable's value rises, so does the other's. A value below 0 indicates a negative correlation, suggesting that as one variable's value increases, the other's decreases. Since the study variables were measured on a continuous scale, it was determined that the best method for examining the relationships between the variables was the Pearson correlation.

Table 4: The Correlation Table

Variables	1	2	3	4	5	6	7	8	9	10
Products introduced-1	1									
Products improved-2	.495**	1								
Product Innovations-3	.592**	.535**	1							
Process introduced-4	.491**	.571**	.608**	1						
Process improved-5	.506**	.673**	.671**	.617**	1					
Process innovation-6	.555**	.695**	.714**	.683**	.514**	1				
Total income to total assets-7	.601**	.686**	.738**	.504**	.664**	.656**	1			
Net Income after Taxes to Total Equity Capital-8	.620**	.777**	.798**	.582**	.720**	.729**	.527**	1		
Net interest income to total earnings assets-9	.077	.047	.074	-.009	.056	.029	.192*	.025	1	
Profitability of Commercial Banks-10	.606**	.422**	**.560****	.522**	.681**	**.675****	.596**	.700**	.431**	1

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

*. Correlation is significant at the 0.05 level (2-tailed).

Relationship between Product Innovation and Profitability of Commercial Banks in Uganda: Table 4's findings demonstrate a substantial positive correlation (r=.560, p>.05) between product innovation and the profitability of Uganda's commercial banks. This implies that any improvement in product innovation will also improve commercial banks' profitability. This further suggests that an improvement in the current products and the introduction of new ones will lead to an improvement in the profitability of commercial banks.

Relationship between Process Innovations and Profitability of Commercial Banks in Uganda: Table 4's findings demonstrate a substantial positive correlation (r=.675, p>.05) between process innovation and the profitability of Uganda's commercial banks. This implies that any improvement in process innovation will also improve commercial banks' profitability. This further implies that raising the standard of operations and implementing novel approaches will boost commercial banks' profitability.

Regression Analysis

Table 5: **Ordinary least square analysis**

Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	**Std. Error**	**Beta**		
1	(Constant)	-4.260	.544		-7.827	.000
	Product Innovations	1.195	.165	.567	7.230	.000
	Process innovation	.655	.190	.270	3.445	.001
R	R Square	Adjusted R Square	F	Sig.		
.783[a]	.614	.608	101.622	.000[b]		

a. Dependent Variable: Profitability of Commercial Banks

The results in Table 4.4 indicate that process innovation and product innovations are significant predictors of the profitability of commercial banks. This is because a unit increase in product innovation will result in to 0.567 unit (Beta =.567, p<.01) increase in profitability of commercial banks in Uganda. In addition, a unit increase in process innovation will result in a 0.270 unit increase in the profitability of commercial banks (Beta-.270, p<.01). Finally, the results indicate that process innovation and product innovation explain 60.8% (Adjusted R Square= .608) of the fluctuations in Uganda's commercial banks' profitability. This also implies that the remaining 39.2% is explained by other factors not considered in this study.

5. Conclusion and Recommendations

It is clear from the research and debate that process improvements have a favorable impact on the profitabilit y of commercial banks in Uganda. This implies that Commercial Banks' profitability will continue to rise as th ey roll out new products and services and make improvements to those already available. It is clear from the results and discussion that process innovations and the profitability of commercial banks are significantly positively correlated. This suggests that for commercial banks to increase their profitability, they must place a high priority on both implementing new processes and distribution channels and streamlining their current ones. It can finally be concluded that both process and product innovations are significant predictors of the profitability of commercial banks. This is because they explain 60.8% of the fluctuations in Uganda's commercial banks' profitability. This further implies that financial innovations are very important for the banks to reduce costs and also increase their profitability.

Recommendations: There is also a need to put much emphasis on Financial Innovations by continuously introducing and improving the existing products/services. The Commercial Banks in Uganda should promote and appreciate Financial Innovations as they are vital not only in enhancing cost minimization but also in improving profitability.

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Quantifying Fiscal Multipliers in South Africa: A Structural Var Approach

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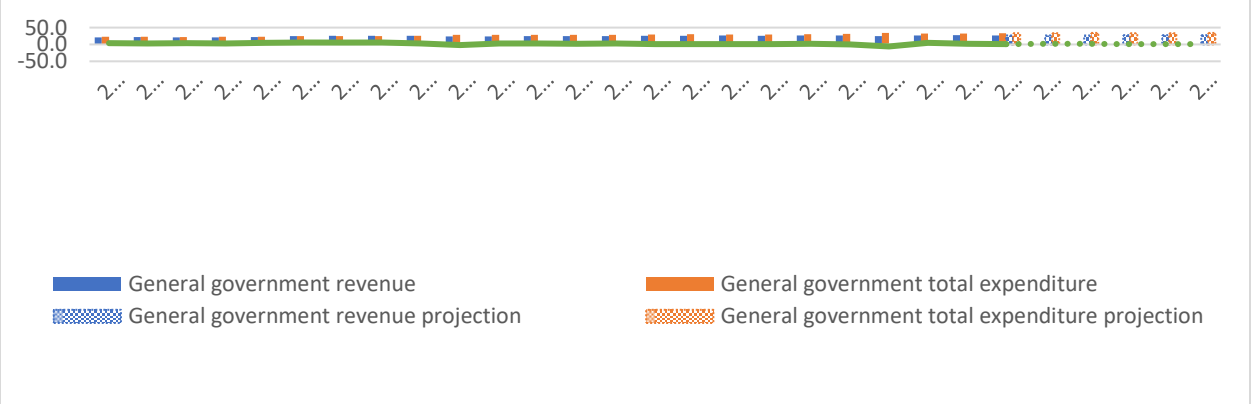
Abstract: Fiscal multipliers have deteriorated in South Africa since the global financial crisis in 2008 and 2009. Weakening fiscal multipliers to a record low of zero has constrained the government's ability to use fiscal policy measures to stimulate the economy, particularly in the aftermath of the COVID-19 pandemic and recent geopolitical risks affecting the global economy. The current paper quantifies fiscal multipliers in South Africa. The study employed the structural vector autoregressive to quantify government spending and government tax revenue fiscal multipliers in South Africa over the period 2000M01–2023M10. The control variables for the study are government total spending, total government tax revenue, and the production index as a proxy variable for economic activity. This is the first study to employ high-frequency monthly data, which increases the number of observations, thus yielding significant and robust results. The accumulated government expenditure and government tax revenue multipliers are 0.4 and 0.1, respectively. The empirical results are consistent with the Keynesian view that government spending, particularly investment spending, fosters economic growth. Structural reforms in logistics, the energy sector, and education to boost economic growth and improve fiscal multipliers that are currently less than one in South Africa must be adopted as a policy response.

Keywords: *Fiscal multipliers, structural vector autoregressive, government spending, government revenue.*

1. Introduction and Background

South Africa has posted consecutive budget deficits since the global financial crisis. The economy is characterized by sluggish growth and structurally high spending resulting from consistently above-inflation increases in the public wage bill, financial support for the ailing state-owned entities (SOEs), and high debt service costs. The International Monetary Fund (IMF) forecasts that the South African economy will grow, on average, by 1.5 percent between the period 2024 and 2028 (Figure 1). Moreover, the budget deficit is predicted to persist over the same period as the government expenditure as a ratio of GDP remains higher than the government tax revenue as a percentage of GDP. The underperformance of the economy and the resultant deteriorating fiscal metrics necessitate fiscal consolidation measures such as minimizing the acceleration of the growth of the public wage bill and restructuring and turning around the financial fortunes of SOEs. The global economic outlook is highly volatile and poses risks of economic shocks such as the conflicts in Ukraine and the Middle East. Consequently, the IMF is forecasting global economic growth to be 2.9 percent in 2024. The study quantifies government spending and tax revenue multipliers from 200M1 to 2023M10 in South Africa.

Figure 1: Fiscal Macroeconomic Indicators



Source: IMF World Economic Outlook (October 2023). Where: GDP=gross domestic product, TAX=total tax revenue, TGE= total government expenditure, PD= public debt.

Fiscal multipliers have been on a downward trend over the years in South Africa. (Kemp, 2020) postulates that they are almost zero. Fiscal multipliers measure the short-term impact of discretionary fiscal policy on output. They are usually defined as the ratio of a change in output to an exogenous change in government spending or tax with respect to their baselines (Dime, et al., 2021). Few studies have investigated fiscal multipliers in South Africa (Kemp, 2020; Merrino, 2021; Derkacza , Bilab, & Arogundadec, 2022). However, numerous studies have been conducted in developed countries on examining fiscal multipliers (Sheremirov & Spirovska, 2022; Hamer-Adams & Wong, 2018; Afonso & Leal, 2019; Gechert & Mentges, 2018). In contrast to South Africa, fiscal multipliers in most developed countries are significantly greater than zero. (Deleidi, et al., 2021) examine fiscal multipliers in Italy through the panel SVAR. The study found that fiscal multipliers are significantly higher than 1 in Italy, which aligns with other developed economies. Moreover, the study found that government investment spending multipliers were larger than government consumption multipliers. The study is consistent with the Keynesian theory that the government must foster and stimulate economic growth through government spending. This study contributes to the body of knowledge by estimating an SVAR to quantify government spending and government tax revenue fiscal multipliers in South Africa over the period 2000M01–2023M10. The study employs the production index as a proxy variable for economic activity, as gross domestic product is measured quarterly and annually. This will increase the number of observations and result in significant and robust coefficients.

2. Literature Review

Theoretical Framework: Theoretical perspectives on fiscal multipliers vary across Keynesian, New Classical, and New Keynesian Dynamic Stochastic General Equilibrium (NK-DSGE) frameworks. Each perspective provides insights into the effectiveness of fiscal policy in stimulating economic activity. According to the Keynesian theory, fiscal policy plays a pivotal role in stabilizing the economy, particularly during periods of deficient demand. According to Keynesian theory, government spending or taxation changes directly influence aggregate demand, affecting output and employment. The multiplier effect arises due to the induced changes in consumption and investment stemming from fiscal policy actions (Blanchard & Brancaccio, 2019). In the Keynesian framework, fiscal multipliers are typically larger in recessions or when monetary policy is constrained, as households and firms respond more robustly to government spending or taxation changes. The new Classical theory, on the other hand, argues that fiscal policy interventions have limited effectiveness in influencing aggregate output. Rational expectations and the neutrality of money are central tenets of the New Classical perspective. According to this view, individuals anticipate future tax increases to finance current government spending, leading to offsetting changes in private consumption and investment behavior (Barro, 1974).

Consequently, fiscal multipliers are often deemed close to zero in the New Classical framework, as any short-term stimulus is counteracted by forward-looking agents adjusting their behavior. The New Keynesian Dynamic Stochastic General Equilibrium (NK-DSGE) framework integrates insights from Keynesian and New Classical theories, incorporating price stickiness, imperfect competition, and forward-looking behavior. In this framework, fiscal multipliers are contingent on various factors, such as the degree of nominal rigidities, the effectiveness of monetary policy, and the intertemporal budget constraint (Woodford, 2003). Fiscal policy shocks may temporarily affect output and employment, particularly when accompanied by nominal rigidities or when monetary policy is constrained by the zero lower bound (Christiano, et al., 2011). However, the effectiveness of fiscal policy diminishes over time as agents adjust their expectations and behavior in response to policy changes. In summary, the theoretical framework for fiscal multipliers encompasses diverse perspectives, ranging from the Keynesian emphasis on demand management to the New Classical focus on rational expectations and policy neutrality. The NK-DSGE framework synthesizes these perspectives, highlighting the nuanced interactions between fiscal policy, monetary policy, and economic dynamics.

Empirical Literature: Numerous studies have quantified fiscal multipliers in South Africa and internationally. Some studies employed the structural vector autoregressive (SVAR) model, while others employed the dynamic stochastic general equilibrium (DSGE) model. Among recent studies that have quantified fiscal multipliers in South Africa (Kemp, 2020; Derkacza , et al., 2022; Makrelov, et al., 2018), quantified the government spending multipliers and tax multipliers in South Africa through three identification methods: the recursive, the Blanchard and Perotti, and the sign restriction techniques. According to the sign-restriction identification

methods, the government spending multipliers are one, whereas the tax multipliers are more than one in absolute value. (Van Rensburg, et al., 2022) examined fiscal multipliers after the global financial crisis from 2009 to 2019. According to the empirical evidence, there has been a significant decrease in the government expenditure multiplier since the global financial crisis. Fiscal multipliers during 2009 and 2010 were more than one and deteriorated over the years to 0.20 in 2014. During 2009 and 2010, the debt-to-GDP ratio was less than 32 percent, and there was a significant increase in capital flows induced by higher rates of return as the developed economies embarked on unconventional monetary policy; hence, there was no crowding effect on investment.

However, from 2015 to 2019, fiscal multipliers hovered in the zero lower bound, which means the government must consider economic reforms on SOEs and the structural economic burden on youth unemployment (Van Rensburg, et al., 2022). (Tendengu, et al., 2022) examine the impact of public sector expenditure and government tax revenue on economic growth in South Africa. The study employed the autoregressive distributed lag (ARDL) model from 1988 to 2018. The study found the tax and government expenditure multipliers to be less than one and positive. This signifies the importance of public expenditure, especially infrastructure investment, as a catalyst for stimulating economic growth. (Schroder & Storm, 2020) quantified input-output income and employment multipliers in 2018. The study found both income and unemployment multipliers to be more than one and positive. The income multiplier was found to be 1.68, while the employment multiplier was found to be significantly high at 6.9. This implies the importance of creating jobs and employment to support sustainable economic growth in South Africa. A growing number of studies have employed the DSGE model to ascertain fiscal multipliers in South Africa. (Jooste, et al., 2013) examine the impact of the government expenditure tax revenue multiplier through the DSGE and the structural vector error correction model. The findings of their study suggest that the government expenditure multiplier is less than one and has an insignificant effect on economic activity over the short and long run.

In contrast to (Kemp, 2020), the tax multiplier is less than one, locked at the zero lower bound, and has an insignificant impact on economic growth. (Leeper, et al., 2017) also employed the DSGE to quantify fiscal multipliers in Canada. Their study found government spending, wealth, and investment multipliers to be less than one in Canada. Small fiscal multipliers in Canada may indicate the crowding out of the private sector as the economy is near capacity. According to (Davig & Leeper, 2011), government expenditure impact and accumulated multiplier range from -0.26 to 1.0 and from -1.0 to 1.4, respectively. (Caggiano, et al., 2015) employed a structural VAR to estimate fiscal government expenditure multipliers. The control variables in the model are total government expenditure, tax revenue, and real gross domestic product over the period 1981Q3 to 2013Q1. The empirical estimates point to fiscal multipliers larger than one during a recession, such as the global financial crisis. The empirical investigation of fiscal multipliers in the United States is consistent with previous empirical literature (Forni & Gambetti, 2014). (Hamer-Adams & Wong, 2018) quantified fiscal multipliers in New Zealand and unlike in the United States, obtained them to be less than one through an SVAR over the period 1990–2017. According to the empirical investigation, the government expenditure multiplier was 0.24, whereas the total tax revenue multiplier had a larger effect of 0.76 to 1.29.

Moreover, the study quantified the public investment multiplier at -0.59, suggesting that more studies must be conducted to determine the real estimate, as it is not aligned with theory and empirical literature. (Deleidi, et al., 2021) investigated fiscal multipliers over the period 1995–2017 in Italy. The study employed the SVAR to calculate government expenditure multipliers and total tax revenue multipliers. It found that government investment multipliers are larger than government consumption multipliers. The empirical results align with Keynesian theory, implying that Italy should increase public spending on investment to stimulate and foster economic growth. A recent study, (Ficarra, 2024) also investigated the fiscal multiplier for Italian provinces. The paper found the government spending multiplier to be less than one, close to zero, and negative. Another study conducted in Italy found fiscal multipliers to be insignificant and close to zero (Cerrato, et al., 2023). However, there seem to be inconsistencies in the estimates of fiscal multipliers in Italy. Most empirical literature found the fiscal multipliers to range from 1.5 to 1.8 in Italy's municipalities, consistent with developed economies' literature (Brueckner, et al., 2023; Corbi, et al., 2019; Dupor & MacCrory, 2018). (Abdel-Haleim, 2024) measured fiscal multipliers through the Bucket approach SVAR model in Egypt from 2005Q1 to 2017Q4. The control variables in the model are total tax revenue, economic activity, government expenditures, and the real interest rate.

This study found that public spending multipliers are larger than tax revenue multipliers. (Dime, et al., 2021) employed the VAR to examine fiscal multipliers in some Asian economies. The study employed quarterly data to quantify government spending and tax multipliers. Government spending multipliers ranged from 0.73 to 0.88, in line with the Keynesian multiplier, and consisted of empirical evidence from developed economies. The government multipliers in Asian countries seem to be larger than those in other developing countries, which are close to zero. The tax revenue multipliers range between -0.41 and -0.62, notably smaller than those in developed countries but larger than those in developing countries. The reviewed literature demonstrates that developed economies' fiscal multipliers seem larger relative to South Africa's fiscal multipliers, which have declined over the years to the zero lower bound. Moreover, unlike in South Africa, in developing countries like Egypt, public spending multipliers are larger than tax revenue multipliers.

3. Methodology

Data: Data has been retrieved from secondary data sources. The methodology and data issues of the fiscal multipliers are discussed in this section. Data is obtained from the South African Reserve Bank (SARB) and International Financial Statistics, spanning from 2000M01 to 2023M10. The production index is used as a proxy variable for gross domestic product and is obtained from the IFS. The government's total spending and the government's total revenue have been log-translated so that they can be interpreted as elasticity. All the control variables have been tested for unit roots at the level form and differences at the first difference. The variable description, measurement, codes, and source are depicted in Table 1 below. Government total expenditure and government tax revenue are measured in million rands, while the production index, which is a proxy for economic activity, is an index.

Table 1: Data Sources

Variables Description	Measurements	Code	Source
Government tax revenue	R millions	KBP4582M	South African Reserve Bank
Government total expenditure	R millions	KBP4601M	South African Reserve Bank
Production index	Index		International Financial Statistics

Source: own estimation.

Model Specification: To examine the impact of fiscal multipliers on economic growth in South Africa over the period 2004–2023, the structural vector autoregressive (SVAR) is estimated. The endogenous variable is the gross domestic product (GDP), while the strictly exogenous variable is the tax revenue (TAX) and the total government expenditure (TGE). Secondary data sources, such as the National Treasury databases, have been utilized. The estimation of the SVAR pretest, such as unit roots, is performed through the Augmented Dicky-Fuller test and the Phillips Perroni test. The reduced VAR is estimated, followed by the lag selection criterion, and then the SVAR is estimated. Subsequently, the impulse response function and the variance decomposition are derived from the SVAR. Diagnostic tests, such as stability tests, are performed to determine the model's suitability. The reduced form SVAR is specified as follows:

$$A_t = \sum_{t=1}^{k=2} \beta_i A_{t-i} + V_t \quad (1)$$

Where K represents the number of lags, A_t is a three-vector variable consisting of total government expenditure (TGE), total government tax revenue (TAX), and gross domestic product (GDP). The vector denotes the reduced SVAR residuals $V_t = [\mu^{GDP} \mu^{TAX} \mu^{TGE}]$ and β_i is a 3 x 3 matrix of coefficients denoting the contemporaneous relationship between each structural shock.

The study adopted the estimation technique and the ordering of variables by (Blanchard & Perotti, 2002; Afonso & Leal, 2019). Variables are ordered from the most exogenous variable to the least exogenous variable. GDP is ordered as the endogenous variable, followed by total government tax revenue and total government expenditure as exogenous variables. The matrix of the reduced form VAR is shown in equation (2) below:

$$\begin{bmatrix} 1 & 0 & 0 \\ \beta_{GDP} & 1 & 0 \\ \beta_{TAX} & \beta_{TGE} & 1 \end{bmatrix} \begin{bmatrix} \mu^{GDP} \\ \mu^{TAX} \\ \mu^{TGE} \end{bmatrix} \quad (2)$$

Where GDP represents gross domestic price, TAX denotes total government tax revenue, and TGE is the total government expenditure, the residuals are represented by the components of V_t, as explained in the previous

paragraph. The fiscal multiplier is derived by calculating the accumulated change in GDP divided by the change in total government tax revenue and total government expenditure over the period. The multiplier is computed as follows:

$$\frac{\sum_0^{t+3} \Delta GDP_t}{\sum_0^t \Delta(TAX/TGE)_t} \quad (3)$$

Calculating Fiscal Multipliers: In addition to estimating the SVAR and calculating the fiscal multipliers through impulse response, the government expenditure and tax multipliers are calculated from 2001 to 2022. Fiscal multipliers can be measured in several ways. They are defined here as the ratio of a change in GDP output (ΔY) to a discretionary change in government spending (ΔG) (Afonso & Leal, 2019; Spilimbergo, et al., 2009). Here, GDP is in real terms, so the multiplier means the effect of a one rand increase in spending on the real GDP level. There are two methods of quantifying fiscal multipliers that are considered:

$$Impact\ multiplier = \frac{\Delta GDP_t}{\Delta(TAX/TGE)_t}$$

$$Cumulative\ multiplier = \frac{\sum_{j=0}^{N} \Delta GDP_{(t+j)}}{\sum_{j=0}^{N} \Delta(TAX/TGE)_{(t+j)}}$$

Where ΔGDP_t is the change in gross domestic product, $\Delta(TAX/TGE)_t$ is the government expenditure shock or total revenue shock over the period 2001-2022.

4. Estimation Results

Data and Descriptive Statistics: Firstly, the descriptive statistics are computed through STATA 14 software. According to Table 2, the mean for total government tax revenue (TAX) is R18428.874 million, and the mean for total government expenditure is R49721.079 million. The mean of total government expenditure is more than the mean of total government tax revenue by R31292.205 million. This means the South African government has been operating with a budget deficit over the years since the global financial crisis of 2007-2009. The budget deficit is detrimental to sustainable economic growth and national savings (Devarajan, et al., 1996). Hence, the South African government relies on borrowing to finance the budget deficit, budget debt, and debt service costs over the period 2000M01–2023M10.

Table 2: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Tax	406	18428.874	15024.379	1584	63954
TGE	406	49721.079	43857.303	4433	216811
GDP	406	100.88	8.065	44.313	118.398

Source: own estimation.

Unit Roots Tests: The graphical unit roots test in Appendix A1 suggests that all the variables (gross domestic product, total government tax, and total government expenditure) are non-stationary at the level form and stationery at the first difference. According to the graphical unit root tests, all three variables have an upward trend in the level form. Whereas, in the first difference, the trends of the variables fluctuate around the steady state zero, reflecting the stationarity of the variables. A vector autoregressive model requires that all variables must be non-stationary at level form and stationery at first difference (Gujarati & Porter, 2021). Moreover, to confirm the validity of the graphical unit roots test, the unit roots tests were performed through the Dicky Fuller tests and the Phillips-Peroni tests. Both the Dickey-Fuller and the Phillips-Perroni tests found the variables to be non-stationary at level form and stationery at first difference. The summary of the unit root tests according to the Dickey-Fuller test and Phillips-Peroni tests is depicted in Table 3 below. The VAR estimation condition that all variables must be I(1) is satisfied, thus a reduced form of VAR was estimated.

Table 3: Unit Roots Tests

	Augmented Dickey-Fuller		Phillips-Perron		
Variables	**Levels**	**1st Difference**	**Levels**	**1st Difference**	**Conclusion**
LOGTAX	-1.358504	−14.60729***	-2.254364	−133.4264***	I(1)
LOGTGE	-1.982861	−6.194855***	-0.149428	−3.350911*	I(1)
GDP	-2.851257	−8.491761***	-1.601079	−7.627268***	I(1)

Notes: Asterisks ***, **, and *, denotes the statistical level of significance at 1%, 5% and 10% respectively.

Lag Length Selection Criterion: Following the performance of the unit roots tests, the reduced form VAR model was estimated, and the lag length was determined through the Akaike Information Criterion (AIC) and the Final prediction error (FPE). Lag length selection is important to reduce autocorrelations in the disturbance term while capturing the dynamic interrelationship among the variables in the SVAR model. According to (Liew & Hussain, 2003), it reduces the probability of underestimation and increases the probability of recovering the true lag length when estimating a model consisting of less than 60 observations. In Table 3, all the selection criteria (the AIC, the SIC, and another selection criterion) are selected in order 8. According to Table 4, lag eight is selected by all the selection criteria. Hence, a reduced SVAR is estimated using leg eight.

Table 4: Lag Selection Criterion

Lag	LogL	LR	FPE	AIC	SIC	HNQ
0	−1081.309	*NA*	0.504	7.829	7.868	7.845
1	−919.229	319.479	0.167	6.724	6.881	6.787
2	−698.999	429.329	0.036	5.199	5.473	5.309
3	−638.852	115.951	0.025	4.829	5.222	4.987
4	−582.125	108.129	0.018	4.484	4.995	4.689
5	−427.137	292.072	0.006	3.431	4.059	3.683
6	−406.657	38.151	0.006	3.348	4.093	3.647
7	−365.644	75.511	0.005	3.117	3.980*	3.463
8	−347.768	32.525*	0.004*	3.052*	4.034	3.446*

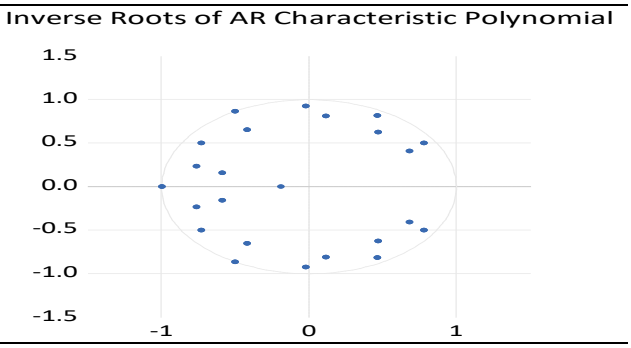
Source: own estimation.

Post-Diagnostic Tests: The Stability Tests: After the estimation of the SVAR model, post-diagnostic tests are performed to determine the stability of the model. According to Table 5, the modulus is less than one, and in Figure 2, the modulus lies within the circle; hence, the structural VAR model is stable. According to (Abrigo & Love, 2016) when the moduli are less than one and lie within the circle, the SVAR is assumed to be stable. After ascertaining the stability condition, a three-variable SVAR consisting of the fiscal variable total government tax revenue, the total government spending, and the gross domestic product is estimated.

Table 5: Modulus

Root	Modulus
-0.501358 - 0.863914i	0.998853
-0.501358 + 0.863914i	0.998853
-0.992991	0.992991
0.468581 + 0.814281i	0.939480
0.468581 - 0.814281i	0.939480
0.785308 + 0.501784i	0.931931
0.785308 - 0.501784i	0.931931
-0.017817 - 0.927583i	0.927754
-0.017817 + 0.927583i	0.927754
-0.729380 - 0.499910i	0.884254
-0.729380 + 0.499910i	0.884254
0.115616 - 0.810168i	0.818376
0.115616 + 0.810168i	0.818376
-0.763174 - 0.232878i	0.797914
-0.763174 + 0.232878i	0.797914
0.684404 - 0.408164i	0.796873
0.684404 + 0.408164i	0.796873
0.472376 + 0.624016i	0.782646
0.472376 - 0.624016i	0.782646
-0.415277 + 0.650828i	0.772031
-0.415277 - 0.650828i	0.772031
-0.587847 + 0.155270i	0.608007
-0.587847 - 0.155270i	0.608007
-0.186523	0.186523

Figure 2: Roots of Characteristic Polynomial

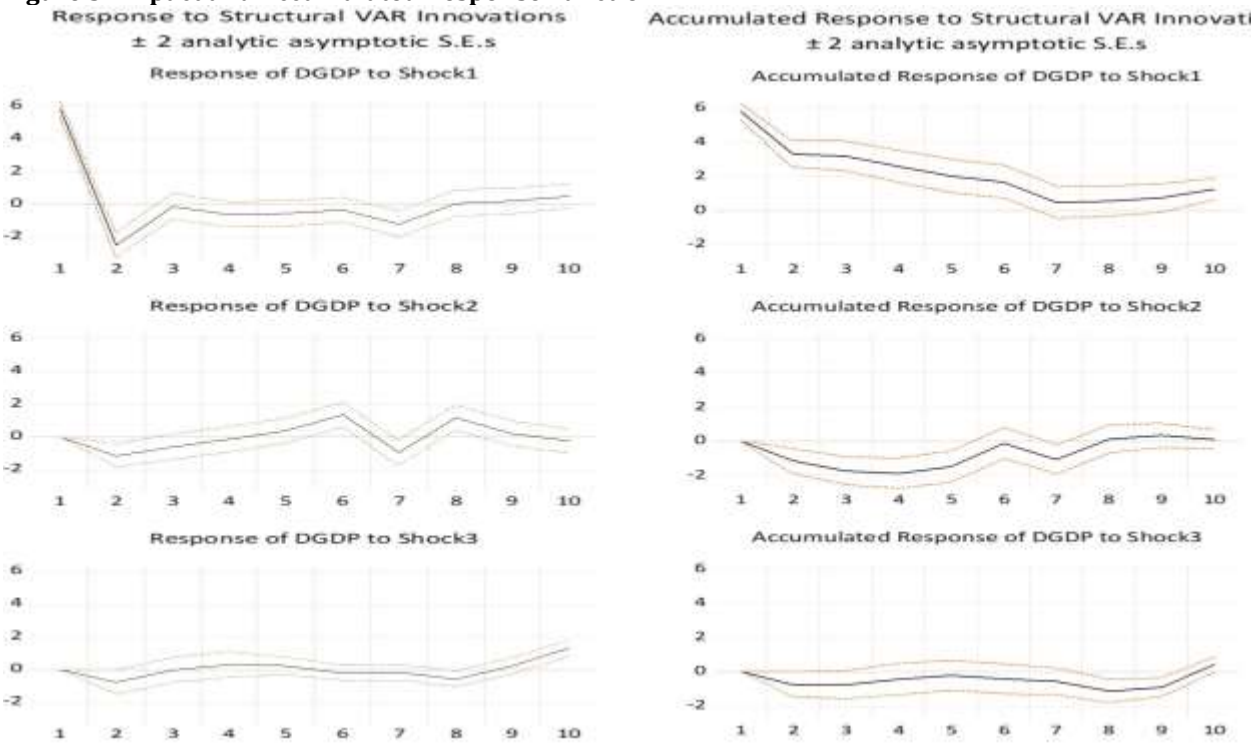


Source: own estimation.

Impulse Response Function: The impulse response function is derived from the structural VAR model. Impulse response functions are employed to examine how a one percent change in total government tax revenue or total government expenditure affects economic activity. The study examines two types of fiscal multipliers: the tax multiplier and the government spending multiplier. The impulse response function enables the interpretation of fiscal shocks to economic output as impact fiscal multipliers or accumulated fiscal multipliers.

Impulse Response of Total Government Expenditure: The impact and accumulated impulse response function have been derived from the SVAR. In Figure 3 the impact impulse response function reflects that the government expenditure multiplier is 1.3 over the period 2000M1-2023M10. The results do not align with previous empirical literature conducted in developing countries, which found the government expenditure multiplier to be less than one (Kraay, 2014; Jooste, et al., 2013). (Kraay, 2014) quantified the fiscal multipliers in South Africa and observed a decline in the fiscal multipliers from 1.5 to less than zero in 2019. The upsurge in gross domestic product in response to a one standard deviation shock of government expenditure is consistent with Wagner's Law of 1862 and the Keynesian theory of 1936.

Figure 3: Impact and Accumulated Response Function



Source: own estimation. Note: column 1is impact impulse response function, column 2 is accumulated response function, shock 2 is DLOGTAX, shock 3 is DLOGTGE.

The South African accumulated government expenditure multiplier is around 0.4, according to the accumulated impulse response function in Appendix A5. This means that a one percentage change in government expenditure induces a 0.4 upsurge in gross domestic product. The South African government expenditure multiplier is small, as it is less than one. The government expenditure is small due to the global financial crisis of 2008–2009 and the COVID-19 pandemic shocks that stimulated households' precautionary savings, resulting in a decline in the marginal propensity to consume and the size of the government expenditure multiplier (Spilimbergo, et al., 2009). Moreover, the poor performance of state-owned enterprises such as ESKOM and Transnet, the maladministration in municipalities, and the high government debt and high debt service costs negatively affect the government expenditure multiplier. The findings are consistent with (Kemp, 2020), who employed a VAR model over the period 1970–2019 to examine the fiscal multipliers in South Africa. He found the government expenditure multiplier to be less than one.

Impulse Response of Total Government Tax Revenue: The accumulated government tax revenue multiplier is 0.1 and is less than one. The results are consistent with (Kemp & Hollander, 2020), who found the tax multipliers to be less than one. Although the tax multipliers are positive, according to theory, they are significantly lower in magnitude and less than. The low tax multipliers are caused by the unsustainable surge in public debts since 2008 and the increase in debt service costs. The impact of the government tax revenue multiplier for South Africa is significantly low at -0.02, according to the impulse response function in Appendix A4. It is less than the government spending impact multiplier. Like the government expenditure multiplier, the tax revenue multiplier is less than one. The impact of the tax revenue multiplier in stimulating economic growth is compromised by the low economic growth and high rate of unemployment among the youth, which results in a shortfall in tax revenue collections. The accumulated government tax revenue multiplier is 0.1, which is less than one. The results are consistent with (Kemp & Hollander, 2020) who found the tax multipliers to be less than one. Although the tax multipliers are positive, according to theory, they are significantly lower in magnitude and less than. The low tax multipliers are caused by the unsustainable surge in public debt since 2008 and the increase in debt service costs.

Forecast Error Variance Decomposition: According to Table 5, shock 1 represents the lag DGDP disturbance term, shock 2 represents DLOGTAX, and shock 3 represents DLOGTGE. A one percent standard deviation shock of DLOGTAX causes a 3.14 percent increase in economic growth from period two to period four. As the number of periods increases over time, the one standard deviation shock of DLOGTAX induces an upswing of 11.87 in DGDP. This means that the National Treasury may increase the wealth tax to increase tax revenue that can be spent on infrastructure projects that will foster economic growth.

Table 5: Forecast Error Variance Decomposition

Period	S.E	DGDP	DLOGTAX	DLOGTGE
1	5.805	100.000	0.000	0.000
2	6.458	95.494	3.140	1.365
3	6.486	94.702	3.943	1.354
4	6.525	94.471	3.939	1.590
5	6.5.64	94.067	4.241	1.692
6	6.718	90.059	8.239	1.702
7	6.892	88.621	9.708	1.671
8	7.015	85.546	12.190	2.264
9	7.026	85.380	12.254	2.366
10	7.173	82.412	11.871	5.718

Source: own estimation.

However, an autonomous change in government spending causes a 1.36 percent upsurge in economic growth in the short run and a 5.7 percent increase in the long run. The positive impact of a one-standard-deviation shock on government spending highlights the importance of government spending, especially in infrastructure, to stimulate the economy. The South African economy grew at 1.6 percent in 2023, which was below the global economic growth of 2.9 percent, (Figure 1). Although government expenditure and total government tax revenue positively affect economic growth, fiscal policy has been ineffective in stimulating the economy, given the binding constraints to economic growth in South Africa. Moreover, the persistent youth unemployment, budget deficit, and high government debt call for structural restructuring of the two major SOEs, Transnet and ESKOM which are primarily responsible for the logistics and energy sectors, respectively. The turnaround in these institutions will contribute to stabilizing the weakened fiscal balance.

5. Conclusion and Policy Recommendations

The study has explored the fiscal multipliers, especially the government expenditure and tax revenue multipliers, in the South over the period 2000M1-2023M10. The SVAR model has been estimated, and the control variables include total government spending and total government tax revenue. According to most empirical literature, the fiscal multipliers have been declining in South Africa to almost zero, comprising austerity measures to stabilize the budget deficit and the runaway public debt. The findings suggest that the accumulated government spending multiplier and the total government tax revenue multiplier are 0.4 and 0.1,

respectively. The estimated results are consistent with other empirical literature, as fiscal multipliers are less than one. Unlike in South Africa, fiscal multipliers in Asian and developed countries are more than one. The research findings support Keynesian theory that the government must support the economy during recession periods.

In the South African context, this can be achieved through strategic investments in logistics, energy, and education, which are likely to improve macroeconomic indicators considerably. This well-targeted government spending is instrumental for the economy's efficiency and productivity, which could lead to higher fiscal multipliers and sustainable economic development. The findings of this research point to some key policy recommendations to improve the fiscal multipliers and economic growth in South Africa. First, there is a very urgent need to reorient government spending towards long-term investment in productive sectors, such as education and infrastructure, to boost economic growth and development. Second, the government has to be more effective and efficient in spending to impact economic growth positively. Third, it is crucial to implement targeted structural reforms in the logistics, energy, and educational sectors. This is necessary to remove existing obstacles and constructively address policies to increase productivity and create the appropriate environment to attract investment. These reforms should aim to create a business-friendly setting that promotes job growth and innovation, thus improving the various impacts on economic growth and fiscal policy.

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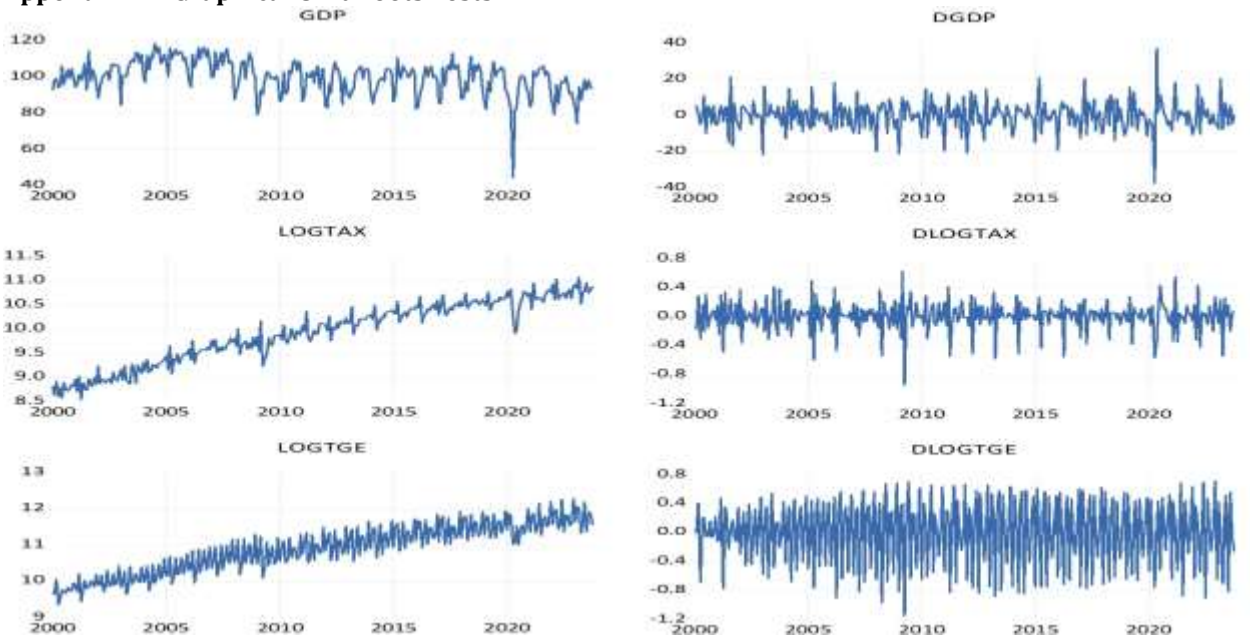
Appendix A1: Graphical Unit Roots Tests



Appendix A2: The Structural VAR Model

Structural VAR Estimates
Date: 04/04/24 Time: 11:45
Sample (adjusted): 2000M10 2023M10
Included observations: 277 after adjustments
Estimation method: Maximum likelihood via Newton-Raphson (analytic derivatives)
Convergence achieved after 26 iterations
Structural VAR is just-identified

Model: Ae = Bu where E[uu']=I

A =

1	0	0
C(1)	1	0
C(2)	C(3)	1

B =

C(4)	0	0
0	C(5)	0
0	0	C(6)

	Coefficient	Std. Error	z-Statistic	Prob.
C(1)	-0.001619	0.001222	-1.324851	0.1852
C(2)	0.001121	0.000868	1.291519	0.1965
C(3)	-0.611920	0.042563	-14.37677	0.0000
C(4)	5.804908	0.246627	23.53720	0.0000
C(5)	0.118044	0.005015	23.53720	0.0000
C(6)	0.083621	0.003553	23.53721	0.0000

Log likelihood -387.0693

Estimated A matrix:

1.000000	0.000000	0.000000
-0.001619	1.000000	0.000000
0.001121	-0.611920	1.000000

Estimated B matrix:

5.804908	0.000000	0.000000
0.000000	0.118044	0.000000
0.000000	0.000000	0.083621

Estimated S matrix:

5.804908	0.000000	0.000000
0.009397	0.118044	0.000000
-0.000760	0.072233	0.083621

Estimated F matrix:

1.731602	-0.659371	-0.431307
0.011699	0.024672	0.001374
0.010317	0.019387	0.019381

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Budgetary Control, Managerial Competencies and Performance of Higher Local Governments in Eastern Uganda

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Abstract: The study aimed to explore the correlation between budgetary control, managerial competencies, and the performance of higher local governments in Uganda's Eastern region. Through a cross-sectional research design, 30 higher local governments out of a population of 32 were analyzed against predictor variables. Validity and reliability tests were conducted on research instruments to ensure data quality. Findings revealed a positive and significant relationship between budgetary control and performance, as well as between managerial competencies and performance. Moreover, there was a statistically significant relationship between both budgetary control and managerial competencies on performance. Regression analysis showed that 55.9% of performance variation was explained by these factors, leaving 44.1% to other factors not considered. Recommendations include strengthening financial management processes and investing in training programs to enhance managerial skills, ultimately improving local government performance.

Keywords: *Budgetary control, Managerial competencies, Performance of higher local governments, eastern Uganda*

1. Background to the Study

How higher local governments perform is very important. For instance, it directly relates to providing individuals with necessary public services, which raises their level of living and overall quality of life (Masuku & Jili, 2019). Second, more successful local governments draw investments and stimulate economic growth, which promotes the creation of jobs and general prosperity (Tang et al., 2021). Notable higher local governments around the world are constantly centered on excellence. Specifically, Rwanda's Kigali performs out in Africa thanks to its effective resource allocation and strong financial control systems (Bandauko & Nutifafa Arku, 2023). Conversely, underperforming local governments such as those in Owerri, Nigeria, and Detroit, Michigan, in the United States highlight the negative effects of insufficient administrative skills and financial control (O'Loughlin & Wilson, 2021; Onibokun, 2019; Ekemam & Njoku, 2021). The performance of higher local governments is enhanced by the interrelated and crucial functions of managerial competencies and budgetary control. Higher local governments can optimize resource utilization, prioritize service delivery, and invest in development initiatives thanks to strong budgetary control measures like setting realistic budgets, comparing budgeted estimates against actuals, monitoring expenditures, and evaluating financial performance (Mujennah et al., 2019). Public trust and confidence are fostered by effective budgetary control, which promotes responsibility, transparency, and responsible financial management (Muguti, 2020). Adding managerial skills to budgetary control gives authorities the ability to lead teams, carry out policies, and make educated decisions (Bukh & Svanholt, 2020). Skilled managers create a culture of responsibility and creativity, strategically align goals, and maximize resource usage (Pasaribu et al., 2021; Hayati, 2021).

There is a reciprocal relationship between managerial competencies and financial control. By delivering precise financial data and recommendations, budgetary control offers the foundation for managerial capabilities (Pratolo et al., 2020). According to Vargas Merino and Zavaleta Chávez (2020), managerial abilities provide the efficient application of budgetary control systems, including conformity to protocols and precise record-keeping. Because of this interdependence, higher local governments function better overall since resource allocation, decision-making, and service delivery are all optimized. According to Mujennah et al. (2019) and Muguti (2020), addressing community needs and promoting performance require a combination of strong administrative competencies and strict budgetary control.

In Uganda, there are large regional differences in the performance of higher local administrations. While some higher local governments have performed admirably, others have a difficult time living up to the expectations of their residents. For instance, the higher local governments of Isingiro, Ibanda, and Kiruhura in western Uganda have been acknowledged for their consistent and strong performance (local government assessment reports 2020, 2021, and 2022). Higher local administrations in Uganda, however, also have formidable obstacles to achieving acceptable performance. Higher local governments in the eastern area were among the lowest-performing ten local governments, following the Local Government Assessment Report (2022). For instance, the report listed the lower local governments of Obongi, Kween, Serere, Bugweri, Kumi, Kwania, Amuria, Namisindwa, Kaperabyong, and Kalaki as some of the least effective. For the past three years, these higher local governments have continuously performed poorly (Local Government Assessment Reports 2020, 2021, and 2022). The reason for persistently low performance is unclear, but research on higher local government performance suggests that inadequate managerial competence and poor budgetary control are related (Ahrens, Ferry & Khalifa, 2018; Asukile, & Mbogo, 2022; Obisanya, & Hassan, 2022). However, little research has been done on this topic among higher local governments in Uganda's Eastern region, necessitating the completion of this study.

2. Literature review

Resource-Based View (RBV) Theory

The Resource-Based View (RBV) hypothesis is a well-known theory that sheds light on managerial competency. The Resource-Based View (RBV) idea was first presented by Jay Barney in 1991 and posits that an organization's performance is contingent upon its distinct resources and capabilities. The RBV hypothesis highlights the role that managers' unique skills, knowledge, and talents have in influencing organizational success when it comes to managerial competencies. The RBV theory indicates that the competency of local government managers has a direct bearing on their capacity to apply and make use of budgetary control mechanisms, as demonstrated by the study on the performance of higher local governments in eastern Uganda. Numerous empirical research has shown that managerial abilities have a favorable impact on organizational performance, hence supporting the RBV theory. For instance, research by Jones and Butler (1992) looked at the connection between firm success and managerial abilities. According to their findings, financial success and manager competency were significantly positively correlated. Similarly, competent managers were more successful in boosting organizational performance, according to Collins and Clark's 2003 investigation on the importance of managerial competencies in strategic decision-making and implementation. Additionally, Ngunjiri et al. (2006) looked into how managerial competencies affected worker performance and discovered that competent leadership had a beneficial impact on worker performance, emphasizing the significance of managing talents in accomplishing organizational goals.

Budgetary control and performance of higher local governments

Control over spending is a critical factor in determining how well higher local governments work. To guarantee the effective distribution and use of financial resources refers to the process of creating and observing budgets (Abdul, Chairil, & Tenripada, 2023). The beneficial effect of financial management on improved local government performance has been the subject of numerous research. For example, research by Smith and Gibson (1995) looked at the connection between higher local government performance and fiscal management. They discovered that better financial results, such as higher income collection, lower expenditure, and improved financial stability, were linked to efficient budgetary control systems. Also, Gamayuni, Dharma, and Cinintya (2023) looked into the relationship between organizational performance in higher local governments and budgetary control. What they found was that performance outcomes, like service delivery effectiveness and efficiency, were positively influenced by budgetary control measures like budgetary feedback, budgetary clarity, and budgetary participation. This suggests that budgetary control mechanisms help higher local governments accomplish their goals and objectives.

Budgetary control affects not only organizational and financial performance but also accountability and transparency in higher local governments. Deng and Zhang (2018) investigated the connection between accountability and financial control in Chinese municipal governments. According to their research, strong budgetary control systems increased accountability by guaranteeing adherence to financial rules and enhancing the dependability and correctness of financial reporting. In a similar vein, Asongu and Nwachukwu

(2016) investigated the connection between corruption in African local governments and budgetary control. They discovered that robust budgetary control systems were linked to decreased levels of corruption, suggesting that budgetary control improves transparency and lowers the likelihood of financial misappropriation.

Additionally, budgetary control affects how higher local governments make decisions and distribute resources. The effect of fiscal control on strategic decision-making in Chinese local governments was studied by Yin et al. (2013). Their research showed that by giving decision-makers pertinent financial data, assisting in resource allocation decisions, and coordinating organizational goals with available resources, budgetary control systems had a favorable impact on decision-making processes. In a similar vein, Hoque and Alam (2014) investigated the connection between resource allocation effectiveness and budgetary management in Bangladeshi municipal governments. They discovered that efficient budgetary control systems enhanced resource distribution, resulting in increased financial efficiency and better service delivery results. Additionally, it has been discovered that budgetary control improves performance assessment and measurement in higher local administrations. A study on the connection between performance evaluation and budgetary control in Chinese local governments was carried out by Guo and Feng (2019). According to their findings, budgetary control systems had a major impact on the fairness and accuracy of performance evaluations, which helped higher local governments pinpoint areas for development and match output with intended results. According to this, budgetary control is an essential tool for assessing the effectiveness of higher local governments and promoting ongoing development.

In higher local administrations, budgetary control improves interdepartmental cooperation and collaboration. Good budgetary management systems make it easier for departments to coordinate and communicate with one another, allowing them to align their aims and collaborate to achieve shared objectives. Li et al. (2016), for instance, looked into how budgetary control affected interdepartmental coordination in municipal governments in China. Their research revealed that budgetary control methods had a favorable impact on coordination efforts, which in turn boosted departmental collaboration, information sharing, and resource pooling, ultimately improving overall performance. Control over spending encourages efficacy and efficiency in the provision of services. Higher Local governments are in charge of providing their communities with a range of services, including infrastructure development, healthcare, and education. Incorporating budgetary control methods facilitates the efficient allocation of resources, expenditure monitoring, and service delivery for higher local governments. For example, a study on the relationship between budgetary control and service delivery performance in Ghanaian local governments was carried out by Amankwah-Amoah et al. (2019). According to their research, financial control has a favorable impact on customer happiness, punctuality, and quality of service delivery outcomes.

Higher local governments' long-term financial viability is supported by budgetary discipline. Higher local governments can improve budget management, cut down on waste and inefficiencies, and guarantee long-term financial stability by taking ownership of their financial resources. The relationship between financial sustainability and budgetary management in Chinese local governments was examined by Jiang et al. (2019). According to their research, efficient budgetary control systems are linked to better financial health and lower financial risk, which enables local governments to continue operating and meeting their societal responsibilities. Higher local governments can more easily implement performance-based budgeting and accountability systems because of budgetary control. Performance-based budgeting ties the distribution of funds in the budget to the accomplishment of particular goals and results. Robust budgetary management mechanisms furnish the required instruments and procedures for overseeing operations, tracking advancements, and assessing the efficiency of budget allocation. Duraku et al. (2020), for instance, investigated how budgetary control affected Kosovo's local governments' performance-based budgeting. According to their findings, budgetary control had a favorable impact on the uptake and application of performance-based budgeting, which enhanced performance outcomes and accountability.

Higher local governments can handle financial risks and adjust to changing conditions thanks to budgetary control. Higher local governments have to react to unanticipated occurrences, changes in the economy, and new issues in a more dynamic environment. Budgetary control gives higher local governments the ability to successfully handle risks and uncertainties by offering a framework for tracking and modifying financial plans.

For instance, a study on the connection between risk management and financial control in higher local governments was carried out by Hartmann and Langfield-Smith (2020). Their results demonstrated how budgetary control systems improved the resilience and adaptability of higher local governments by having a beneficial impact on risk identification, assessment, and mitigation methods.

Managerial competencies and performance of higher local governments

This study of the literature investigates the connection between higher local government performance and managerial competencies. This review attempts to expand our understanding of how managerial talents affect different areas of greater local government performance by looking at pertinent studies.

Higher local government performance is positively impacted by managerial competencies. The knowledge, skills, and abilities required to successfully carry out their duties and obligations are possessed by competent managers (Taneo et al., 2022). This idea is supported by numerous investigations. For instance, a substantial positive association between managerial abilities and private-sector financial success was discovered by Jones and Butler (1992). Similarly, Ngunjiri et al. (2006) showed that in public sector enterprises, competent leadership has a beneficial impact on staff performance. The importance of managerial competencies in promoting performance enhancements in higher local governments was emphasized by Pollitt and Bouckaert (2017). Superior local government performance is improved by effective leadership. To improve coordination, collaboration, and strategic management, managers need to possess a strong set of leadership abilities, such as vision, decision-making, and communication (Marsuni, Rasulong & Adzim, 2022). In the public sector, Kim and Choi (2011) discovered a favorable correlation between organizational performance and leadership abilities. Strong leadership traits, like vision and teamwork, are critical for inter-organizational cooperation to be successful in higher local government situations, according to O'Toole Jr. et al. (2008). The impact of leadership qualities on the success of local public organizations was illustrated by Hartmann and Mastrangelo (2019).

Effective strategic planning and implementation in higher local governments are facilitated by managerial competencies. The knowledge and abilities required to create and carry out strategic plans in higher local government contexts are possessed by competent managers. Brewer and Walker (2011) discovered a favorable correlation between the caliber of strategic plans in local governments and managerial competencies. Successful public management reforms rely on managerial competencies, as noted by Verhoest et al. (2015). The design and implementation of performance assessment systems were positively influenced by managerial competencies, as shown by Walker and Brewer (2009). Effective resource management is made possible in higher local governments by managerial competencies. The ability to effectively distribute and manage resources—such as money, people, and infrastructure—is a critical talent for managers at all levels of local government. Meijer and Curtin (2019) provided evidence that financial management methods in European municipalities were positively impacted by managerial competencies. Effective human resource management techniques were found to be fostered by competent managers, according to Kim and Lee (2015). The importance of skilled managers in strategic infrastructure planning and sustainable development was highlighted by Van Dooren et al. (2019).

Higher local governments operate better and have more competent managers thanks to ongoing professional development. Continual professional development initiatives including networking, mentoring, and training help to advance managerial competencies. The beneficial effects of professional development programs on managerial competencies were emphasized by Grimmelikhuijsen et al. (2019). The importance of mentoring programs in enhancing managerial skills and organizational performance was highlighted by (Luna-Arocas, & Lara, 2020). The significance of networking and collaboration in augmenting managerial competencies in higher local governments was underscored by Hammerschmid et al. (2016). Effective stakeholder engagement and community participation in higher local governments are fostered by managerial competence. Effective managers can interact with a wide range of stakeholders, such as residents, neighborhood associations, and other governmental bodies, which promotes more involvement and cooperation in local decision-making processes. Zhang et al. (2018) discovered that in higher local governments, managerial competencies had a favorable impact on citizen satisfaction and stakeholder involvement. The significance of skilled managers in fostering robust connections with community stakeholders, augmenting confidence, and attaining superior performance results was underscored by Ahmed and Raza (2019). Transparent and accountable governance in higher local governments is facilitated by managerial abilities. Since they are knowledgeable about ethical

behavior, accountability, and openness, competent managers make sure that local governance procedures are carried out openly and responsibly. According to Van Wart et al. (2020), management competencies have a favorable impact on local government organizations' practices related to accountability and openness. In higher local government settings, Olivas-Luján et al. (2017) emphasized the need for capable managers to cultivate a culture of integrity and ethical behavior.

In higher local governments, managerial competencies facilitate efficient risk management and crisis response. Skilled managers can recognize and evaluate risks, create plans for risk management, and react quickly to emergencies or crises. The significance of managerial competencies in risk mitigation and supporting the resilience of higher local governments was highlighted by Liu et al. (2020). The need for capable managers in crisis management, coordination, and sound decision-making in times of disaster was emphasized by Brown and Potoski (2019). In higher local administrations, managerial competencies foster innovation and adaptation. In the framework of higher local governments, competent managers may promote an innovative culture, inspire creative problem-solving, and adjust to changing conditions. According to Hartmann et al. (2018), innovation performance in higher local government entities was significantly impacted by managerial competencies. The importance of skilled managers in promoting organizational learning and developing innovative capacities was highlighted by Ditillo and Liguori (2012). In higher local governments, managerial competencies support environmental stewardship and sustainable development. A responsible and environmentally conscious decision-making process is ensured by competent managers who have the knowledge and abilities to incorporate sustainability principles into higher local government policies and practices. In the context of municipal governments, (Lægreid, & Rykkja, 2023) emphasized the importance of skilled managers in advancing sustainable development. The significance of managerial competencies in tackling environmental issues and executing sustainable projects in higher local governments was highlighted by Kharrazi et al. (2019).

The literature analysis concludes by highlighting the noteworthy combined impact of budgetary control and managerial abilities on the performance of higher local governments. The data exhibited shows how these factors are related to one another and how they affect several performance metrics, such as financial results, service quality, strategic alignment, innovation, public involvement, staff motivation, and budgetary restraint. It is crucial to acknowledge the existence of a study lacuna in comprehending the particular dynamics of the combined influence of management abilities and budgetary control within the framework of local governments in emerging nations. This link has not received much research in these kinds of settings, particularly in areas with particular potential and problems. To close this gap and improve how capable managers implement budgetary control systems, more empirical research is required. This research will ultimately improve the performance of higher local governments in developing nations, with a particular emphasis on higher local governments in eastern Uganda. Future research can help create more effective strategies and policies that support performance improvement in higher local government contexts by addressing this research gap.

3. Methodology

This research employed a cross-sectional survey design, chosen due to its suitability for studying a specific phenomenon within a short timeframe (Shegafi & Lee, 2023). The selection of this design was based on its cost-effectiveness in providing the required data (Akotia, Awuzie, & Egbu, 2023). The study population consisted of higher local governments within the eastern region of Uganda, comprising 32 entities (Ministry of Local Government, 2022). Specifically, the focus was on 30 higher local governments since it was the sample size based on Krejicie and Morgan's table (1970) and simple random sampling was used to select the local governments. The unit of inquiry included heads of finance, district planners, accounting officers, district chairpersons, and secretaries for social services. This selection was made because these individuals were deemed knowledgeable about the area of study and capable of providing the necessary data.

Operationalization and Measurement of Variables

This was carried out using literature reviews, theoretical frameworks, and earlier research. The process of converting ideas or notions into quantifiable metrics and indicators is known as operationalization (Pearlson, Saunders, & Galletta, 2019). It is crucial to convert the variables and concepts into quantifiable indicators to provide answers to the research questions. Operationalization makes it easier to translate abstract concepts of

variables into observable traits or behaviors that can be quantified (Larson, 2020). The performance of the higher local governments in eastern Uganda is the dependent variable, and managerial competencies and budgetary control are the independent variables, as the theoretical and conceptual framework explains.

Table 1: Operationalization and Measurement of Variables

Global variable	Definition	Dimensions	Measurement	Sample questions
Budgetary Control	The process of establishing financial goals, keeping an eye on actual performance, and implementing corrective measures to guarantee that goals are met is known as budgetary control. It involves creating budgets, doing variance analyses, and putting corrective measures into place. It is based on the concepts of managerial accounting (Hansen et al., 2018; Horngren et al., 2017).	defining goals Cost surveillance Cost assessment Analyzing variance	Eight items in the questionnaire were ranked by respondents using a five-point Likert scale.	The goal setting is conveyed clearly.
Managerial competencies	The capacity of managers to carry out their duties in an efficient manner and make a positive impact on the success of their organizations is referred to as managerial competence. To effectively carry out their duties, managers need to have a variety of knowledge, abilities, attitudes, and behaviors (Buller & McEvoy, 2012; Hult et al., 2016).	Competencies Knowledge Experience	Eight items in the questionnaire were ranked by respondents using a five-point Likert scale.	Handling tasks on the job
Performance of higher Local governments	Elevated In certain locations, local governments are in charge of providing several essential services to residents and companies. Notable roles like social services, education, housing, planning, and garbage collection are among them, as are some less well-known ones like business support, registration services, licensing, and disease control.	Revenue targets Service delivery targets Expenditure targets	Seven items in the questionnaire were ranked by respondents using a five-point Likert scale.	Increased local governments reach their service delivery goals.

Data processing and analysis

Data from the field was coded, edited and analyzed using inferential statistics (Correlation and Regression analysis)

4. Results

Demographic characteristics of the respondents

The demographics of the respondents were distributed as indicated in Table 2.

Table 2: Demographic characteristics of the respondents

Category	Item	Frequency	Percent
Gender	Male	79	58.5
	Female	56	41.5
	Total	**135**	**100**
Tenure working	Below 5 years	35	25.9
	5- 10 years	74	54.8
	Above 10 years	26	19.3
	Total	**135**	**100**
Level of education	Less than diploma	28	20.7
	Degree	70	51.9
	Post Graduate	37	27.4
	Total	135	100

Data: Primary source (2023)

The results in Table 4.1 reveal that 79 (58.5%) of the respondents are male, while 56 (41.5%) are female. Among the 135 respondents, 35 (25.9%) have worked with the higher local government for less than five years, indicating the presence of early-career professionals. The majority, 74 individuals (54.8%), have a tenure of 5-10 years, signifying a mid-career demographic with substantial experience. The category of "Above 10 years" includes 26 individuals (19.3%), suggesting the presence of seasoned professionals with extensive experience In the "Less than diploma" category, 28 individuals (20.7%) have educational backgrounds below the diploma level. A significant portion, 70 individuals (51.9%), possess bachelor's degrees, falling into the "Degree" category. Additionally, 37 individuals (27.4%) hold postgraduate qualifications.

Table 3: Characteristics of the LG

Item		Frequency	Percentage
Age of local government	Less than 5 years	6	21.5
	5 – 10 years	24	78.5
	Total	**30**	**100**
Location	Teso region	10	33.3
	Bugisu region	8	26.7
	Karamoja region	4	13.3
	Elgon region	8	26.7
	Total	**30**	**100**

The results in Table 4.2 reveal a notable distribution in local governments' age and geographic location. Most local governments (78.5%) fall within the 5 to 10 years age range, suggesting a recent wave of establishment. Meanwhile, a smaller proportion (21.5%) comprises local governments that are less than 5 years old. This discrepancy in age highlights potential variations in governance maturity, experience, and challenges among local governments, with those in the 5 to 10-year category potentially still navigating the maturation process. Geographically, the study indicates diverse representation, with 33.3% in the Teso Region, 26.7% each in the Bugisu and Elgon regions, and 13.3% in the Karamoja region. This distribution implies regional disparities in development needs, resources, and challenges. Policymakers should consider these variations when allocating resources and designing interventions to ensure equitable development across regions. Tailored approaches

that account for both the age and regional context of local governments will be crucial in enhancing their overall performance and effectiveness in service delivery.

Pearson Correlation Matrix

The degree of linear correlation between the research variables was assessed using Pearson's correlation analysis, which is represented by the letter r. The findings are displayed as shown in Table 4.3.

Table 4: Correlation Results

		1	2	3	4	5	6	7	8	9	10	11	12
Target setting-1		1											
Cost Monitoring-2		-0.02	1										
Cost Evaluation-3	.254**		0.129	1									
Budgetary control-4	**.721****		**.456****	**.734****	**1**								
Knowledge-5	.711**		0.048	.196*	.545**	1							
Skills-6		0.023	.642**	0.093	.320**	0.008	1						
Experience-7	.673**		0.018	.205*	.515**	.576**	-0.09	1					
Managerial competencies-8	**.690****		**.376****	**.246****	**.691****	**.782****	**.496****	**.717****	**1**				
Revenue targets-9	.749**		-0.035	0.049	.457**	.669**	-0.033	.642**	.624**	1			
Service delivery targets-10	.260**		.320**	.491**	.543**	.294**	.176*	.565**	.511**	.185*	1		
Expenditure targets-11		-0.049	.690**	.220*	.364**	0.036	.330**	0.06	.223**	-0.037	.386**	1	
Performance of Higher LGS-12	**.523****		**.439****	**.372****	**.684****	**.533****	**.213***	**.667****	**.699****	**.627****	**.778****	**.604****	**1**

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).
N = 30

Relationship between budgetary control and performance of higher local governments in the Eastern Region of Uganda

Table 4 presents findings demonstrating a statistically significant positive correlation between budgetary control and the performance of higher local governments in Uganda's Eastern area (r=.684, p<.01). This suggests that any improvement in financial control will lead to an improvement in the Eastern area of Uganda's higher local governments' performance. We accept the null hypothesis based on hypothesis one and conclude that the Eastern area of Uganda has a positive and substantial association between budgetary control and the performance of higher local governments.

Relationship between managerial competencies and performance of higher local governments in Eastern Region of Uganda

The findings shown in Table 4 demonstrate a statistically significant positive correlation (r=.699, p<.01) between the performance of higher local governments in the Eastern area of Uganda and managerial competencies. This suggests that any improvement in managerial skills will lead to an improvement in the Eastern area of Uganda's higher local governments' performance. We accept the null hypothesis based on hypothesis two and conclude that management competencies and the performance of higher local governments in Uganda's Eastern region have a positive and substantial relationship.

Multiple regression analysis

To demonstrate the causal relationship between the research variables and to explain the independent variables' predictive ability concerning the dependent variable, a multiple regression analysis was conducted.

Table 5: Multiple regression analysis

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.168	.279		-.604	.547
	Budgetary Control	.451	.093	.384	4.845	.000
	Managerial Competences	.614	.112	.434	5.471	.000
R	.752[a]					
R Square	.566					
Adjusted R Square	.559					
F	86.068					
Sig.	.000[b]					

a. Dependent Variable: Performance of Higher LGS, N = 30

Table 5's regression analysis results show that management competencies and budgetary control have a substantial impact on the performance of higher local governments in Uganda's Eastern region. Important details regarding the statistical significance of these relationships are provided by the significance rate, which is reflected by the p-values.

In Uganda's Eastern area, budgetary control significantly improves the performance of higher local governments (Beta=.384, p<.05. This suggests that the performance of higher local governments in Uganda's Eastern area has increased significantly by 0.384 units for every unit rise in budgetary control.

Similarly, the performance and managerial abilities of Uganda's Eastern region's higher local governments (Beta=.434, p<.05.05). This suggests that the performance of higher local governments in Uganda's Eastern area has increased statistically significantly by 0.434 units for every unit rise in management abilities.

In conclusion, the analysis shows that management competencies and budgetary control have a statistically significant impact on the performance of higher local governments in Uganda's Eastern area. The regression results show that management competencies and budgetary control account for 55.9% (Adjusted R Square=.559) of the variances in the performance of higher local governments. This suggests that other factors not included in this study account for 44.1% of the variation in performance. We accept the null hypothesis based on hypothesis three and conclude that managerial competencies and budgetary control work together to positively and significantly predict the performance of higher local governments in Uganda's Eastern region.

5. Conclusion and Policy Recommendations

From the findings, it can be concluded that Managerial competencies are a significant predictor of the performance of higher local governments in the Eastern region of Uganda since it is confirmed by both correlation and regression results. Further, it can be concluded that any positive change in budgetary control in terms of target setting, cost monitoring, and cost evaluation will result in better performance of higher local governments in the Eastern region of Uganda. Strengthening and improving financial management, budgeting, and control processes. Given the positive relationship between budgetary control and the performance of Higher LGS. This may involve stricter financial oversight, better budget allocation, and tracking of expenditures. Additionally, this suggests that revenue targets will improve if there is an improvement in the skills, knowledge, and experience of local government officials. In addition, investing in training and development programs for managers and staff can be beneficial. Enhancing their skills in leadership, decision-making, and problem-solving can contribute to better performance.

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Corporate Governance Practices, Operating Environment and Financial Sustainability of Saccos in Greater Mbarara District

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Abstract: This study investigated the link between corporate governance practices, the operating environment, and the financial sustainability of Savings and Credit Cooperatives (SACCOs) in the Greater Mbarara region. It aimed to understand how each factor, and their combined effect, influence SACCO's financial health. The study employed a cross-sectional design and analyzed data from 164 SACCOs (sample size determined using Krejicie and Morgan table (1970). Statistical analysis revealed that both corporate governance practices and the operating environment have a positive and significant relationship with SACCO's financial sustainability. Additionally, their combined effect was also found to be positive and significant. The results suggest that 42.6% of the variation in financial sustainability can be explained by these two factors, leaving 57.4% to be influenced by other, unexplored aspects. To further improve SACCO's financial health in the region, the study recommends fostering communication with decision-makers, collaborating with governance and environmental experts, and implementing continuous monitoring of governance initiatives and environmental adaptations.

Keywords: *Corporate governance practices, operating environment and financial sustainability, saccos, Greater Mbarara district*

1. Introduction

Financial sustainability is pivotal for SACCOs and financial institutions, gauged through deposit mobilization, institution size, and return on assets (ROA), which collectively reflect resource efficiency and growth potential (Otwoko, 2023). Institution size's importance is evident in Zenith Bank's Nigerian success, expanding its asset base and market presence to solidify long-term financial resilience (Mogaji, 2023). Corporate governance practices and the operating environment significantly influence the financial sustainability of SACCOs (Lennah & Bett, 2023). Effective corporate governance fosters accountability, transparency, and stakeholder engagement, building trust and enhancing the long-term viability of companies (Miano & Gitonga, 2020). By incorporating sustainable practices into their strategies and operations, companies can adapt to the interests of stakeholders and adopt a long-term perspective, promoting resilience and adaptability (Settembre-Blundo et al., 2021). The operating environment, encompassing legal, regulatory, economic, social, and environmental factors, plays a pivotal role in business financial sustainability (Trevlopoulos et al., 2021). Compliance with regulations and industry standards ensures responsible practices, mitigating reputational and financial risks (Ioannou & Serafeim, 2017). Additionally, understanding stakeholder expectations and market opportunities helps businesses align their strategies with social and environmental concerns, fostering sustainable growth. The National Bank of Rwanda has implemented regulations that protect SACCO members and promote financial stability within the sector (Mahembe & Ntaganda, 2019). These regulations ensure that SACCOs operate responsibly and sustainably. By aligning corporate governance practices with a supportive operating environment, Rwanda has achieved positive outcomes in terms of SACCO financial sustainability.

Corporate governance practices and the operating environment are of paramount importance for the financial sustainability of financial institutions, including SACCOs, in developing nations, Africa, and East Africa as a whole. Effective corporate governance ensures accountability, risk management, and member protection. For instance, in Kenya, the SACCO Societies Regulatory Authority (SASRA) emphasizes transparency and accountability in SACCO operations, safeguarding member interests (K'Obonyo, 2018). Moreover, a supportive operating environment which refers to the specific conditions and factors that influence the functioning and long-term viability of a business, includes a well-defined regulatory framework, economic stability, and favorable market conditions is essential. In Rwanda, regulations by the National Bank of Rwanda protect members and promote financial stability for SACCOs (Mahembe & Ntaganda, 2019). Market conditions, such as the growth of mobile banking and digital financial services in Kenya, provide opportunities for SACCOs to

expand their reach and enhance service delivery, thereby contributing to financial sustainability (Kemboi & Ndolo, 2019). By promoting good corporate governance practices and creating favorable operating environments, developing nations in Africa can enhance the financial sustainability of financial institutions like SACCOs.

In Uganda, the financial sustainability of financial institutions, including SACCOs, relies on robust corporate governance practices and a conducive operating environment. The Uganda Cooperative Alliance (UCA) has established corporate governance standards that promote transparency, accountability, and responsible decision-making within SACCOs, safeguarding member savings (Muwanga, 2017). These standards, coupled with a well-defined regulatory framework set by the Bank of Uganda, ensure effective board oversight and member protection, enhancing the financial sustainability of SACCOs (Tibamanya, 2021). Additionally, a stable economic climate further contributes to their financial sustainability by reducing volatility and uncertainties, enabling SACCOs to attract and retain members, generate sustainable returns, and support Uganda's financial inclusion goals (Mugume & Ggoobi, 2021).

Despite the existing literature emphasizing the importance of financial sustainability for SACCOs and the role of corporate governance practices and the operating environment in achieving it, there is a significant research gap in examining the relationship between these variables specifically in the context of the Greater Mbarara districts. Previous studies have cited examples from Kenya and Rwanda, but the context of SACCOs in the Greater Mbarara District has not been adequately explored. Despite the efforts made, SACCOs in greater Mbarara face challenges in terms of financial sustainability, as indicated by a growth rate of only 7% and fluctuating financial performance ranging from -5% to 10%. This instability often leads to the closure of certain SACCOs that are unable to sustain themselves (Micro Finance Support Centre annual report, 2022). A study conducted by AMFI (2022) reveals that 23.5% of SACCOs in greater Mbarara fail to reach their fifth anniversary, based on data analyzed from 2015 to 2022. Existing literature commonly links the financial unsustainability of SACCOs to poor corporate governance practices, including issues such as a lack of transparency and accountability (Solomon, 2020; Wasdi, 2023; Agati, 2006; Nwagbara & Ugwoji, 2015).

This research aims to fill this knowledge gap by investigating the relationship between corporate governance practices, the operating environment, and the financial sustainability of SACCOs in the districts comprising Greater Mbarara. The findings from this study will provide valuable insights into how corporate governance practices and the operating environment influence the financial sustainability of SACCOs in this specific geographical area.

2. Review of literature

Theoretical Review

The Agency Theory: The Agency Theory, by Jensen and Meckling (1976), is a prominent theoretical framework that centers on the principal-agent dynamics within organizations. This theory acknowledges the inherent conflicts of interest between shareholders (principals) and managers (agents) and emphasizes the necessity of aligning their interests to foster robust corporate governance. At its core, the Agency Theory posits that managers, acting as agents, may pursue self-interests that could deviate from the objectives of shareholders, who represent the ultimate owners of the firm (Jensen & Meckling, 1976). To mitigate agency problems and promote effective corporate governance, the Agency Theory proposes the adoption of various mechanisms. These mechanisms encompass the implementation of independent boards, the design of executive compensation contracts, and the encouragement of shareholder activism, all of which play pivotal roles in monitoring and controlling managerial conduct (Jensen & Meckling, 1976). Independent boards consist of directors who are not directly involved in the day-to-day operations of the firm, thereby enabling them to provide impartial oversight and decision-making (Fama, 1980). Executive compensation contracts, on the other hand, can be structured to align the interests of managers with those of shareholders through the inclusion of performance-based incentives (Jensen & Murphy, 1990). Furthermore, shareholder activism pertains to the active engagement of shareholders in influencing corporate decisions and strategies to safeguard their interests (Brav et al., 2008). Numerous studies have endeavored to apply the Agency Theory, shedding light on its implications and assessing the efficacy of governance mechanisms in ameliorating agency problems.

In a comprehensive examination, Bebchuk, Cohen, and Wang (2017) investigated the impact of CEO pay ratio disclosure on corporate governance and firm performance. Analyzing a sample of U.S. public companies after the introduction of the CEO pay ratio disclosure rule mandated by the Dodd-Frank Act, the findings revealed that enhanced transparency regarding CEO pay ratios facilitated improved corporate governance practices, such as augmented board independence and heightened shareholder engagement. Moreover, firms with higher CEO pay ratios experienced a decline in their market value, indicating that the disclosure of pay disparities can assist in aligning managerial incentives with shareholder interests (Bebchuk et al., 2017).

Despite its contributions to the comprehension of agency relationships, the Agency Theory possesses certain limitations. Firstly, the theory rests on simplified assumptions, assuming rational behavior and homogeneous preferences among shareholders and managers. This simplification may not fully encapsulate the intricacies of real-world agency relationships (Jensen & Meckling, 1976). Secondly, the effectiveness of specific corporate governance mechanisms may vary across industries, countries, and organizational contexts, thereby limiting the establishment of universal prescriptions (Jensen & Meckling, 1976). Finally, agency problems can persist even with the presence of governance mechanisms, as managers may find ways to circumvent controls and act in their self-interests (Bebchuk & Fried, 2003).

In conclusion, the Agency Theory provides valuable insights into the principal-agent relationship within organizations and underscores the need for aligning the interests of shareholders and managers. Corporate governance mechanisms, such as independent boards, executive compensation contracts, and shareholder activism, can aid in reducing agency problems and enhancing accountability. However, future research should strive to overcome the limitations of the theory and explore diverse contexts to offer a more comprehensive understanding of agency relationships and effective governance mechanisms.

Institutional Theory: Institutional Theory, developed by DiMaggio and Powell (1983), emphasizes the role of formal and informal institutions in shaping organizational behavior. It suggests that organizations conform to prevailing rules, norms, and societal expectations to gain legitimacy and ensure survival. The operating environment, consisting of legal frameworks, cultural values, and socio-political factors, acts as a set of institutional pressures that influence business practices. Understanding and responding to these pressures enable organizations to navigate external constraints and align their strategies with institutional expectations. Numerous studies conducted after 2017 have further explored the concepts and implications of Institutional Theory. One such study by Greenwood, Raynard, Kodeih, Micelotta, and Lounsbury (2011) investigated the diffusion of corporate social responsibility (CSR) practices across organizations. By examining the influence of institutional factors, such as inter-organizational networks and regulatory contexts, the researchers highlighted how CSR practices spread within industries and regions (Greenwood et al., 2011). Their findings emphasized the role of institutional pressures in shaping CSR adoption and diffusion.

Additionally, Lawrence, Suddaby, and Leca (2013) conducted a study on institutional work, which refers to the purposeful actions undertaken by individuals and organizations to create, maintain, and disrupt institutions. Their research sheds light on the strategies employed by actors to shape institutional arrangements and influence organizational behavior (Lawrence et al., 2013). The study highlighted the importance of understanding institutional work as a means to navigate and respond to institutional pressures.

Furthermore, Lounsbury and Crumley (2007) examined the influence of institutional logic on organizational practices. They argued that organizations are embedded in multiple institutional contexts and may be subject to conflicting logic. The study explored how organizations reconcile these competing logics and the implications for their behavior and strategies (Lounsbury & Crumley, 2007). By analyzing the interplay between institutional logic and organizational practices, the researchers deepened our understanding of the dynamics within institutional environments.

While Institutional Theory provides valuable insights, it is important to acknowledge its limitations. One limitation is the challenge of distinguishing between institutional isomorphism (conformity to institutional pressures) and strategic adaptation (purposeful deviation from institutional expectations) in organizational behavior. Additionally, the theory tends to focus more on macro-level institutional forces, potentially overlooking the agency and actions of individuals within organizations.

In conclusion, Institutional Theory highlights the significance of formal and informal institutions in shaping organizational behavior. Recent studies have explored the diffusion of practices, the role of institutional work, and the influence of institutional logic on organizational behavior. However, challenges exist in distinguishing between conformity and strategic adaptation, as well as considering individual agency within organizations. Understanding and responding to institutional pressures are crucial for organizations to gain legitimacy and align their strategies with societal expectations.

Relationship between the study variables

The relationship between corporate governance practices and business financial sustainability: Corporate governance practices and business financial sustainability have garnered significant attention in the global business landscape (Chen, Wang, & Huang, 2018; Jones & Ratliff, 2019). Corporate governance encompasses the system of rules, practices, and processes by which companies are directed and controlled (Chen et al., 2018). It focuses on the relationships between stakeholders, such as shareholders, management, and the board of directors, to ensure transparency, accountability, and ethical behavior within organizations. Business financial sustainability, on the other hand, involves integrating social, environmental, and economic considerations into business operations to create long-term value while minimizing adverse impacts.

Numerous studies conducted worldwide have explored the relationship between corporate governance practices and business financial sustainability (Sjöström, Johansson, & Kallifatides, 2020). Understanding how corporate governance practices influence business financial sustainability is crucial for organizations seeking to adopt effective governance mechanisms and promote sustainable practices aligned with global goals like the United Nations Sustainable Development Goals (SDGs) (Mafini, King, & Okeahalam, 2020). Examining the existing literature allows us to gain insights into the findings and trends related to this relationship across diverse regions.

This literature review aims to explore the relationship between corporate governance practices and business financial sustainability through the review of ten studies conducted in various parts of the world. The selected studies include two conducted in Asia (Wong, Wong, & Wong, 2017), two in North America (Martinez-Ferrero, 2018), two in Europe (Sjöström et al., 2020), two in South America (de Almeida, Ribeiro, & Godoy, 2019), and two in Africa (Mafini et al., 2020). Analyzing the findings from these studies will provide a comprehensive understanding of how corporate governance practices influence business financial sustainability in diverse contexts. Furthermore, this review will shed light on the implications of effective governance mechanisms for promoting sustainable business practices and enhancing overall firm performance.

In a study conducted by Chen, Wang, and Huang (2018) in Taiwan, a quantitative research design was employed to investigate the impact of corporate governance on firm performance. The study focused on a sample of publicly listed companies in Asian countries. The findings revealed a positive relationship between corporate governance practices and firm performance, indicating that effective governance mechanisms enhance business financial sustainability in Asia.

Jones and Ratliff (2019) conducted a qualitative study in the United States to explore the association between corporate governance and corporate social responsibility (CSR) in North America. Using case analysis of North American companies, the researchers found that companies with better governance exhibited a stronger commitment to sustainable business practices, suggesting a positive relationship between governance and CSR initiatives in the region.

Sjöström, Johansson, and Kallifatides (2020) conducted a mixed-methods study in Sweden to examine the relationship between corporate governance and financial sustainability reporting in European companies. The research design incorporated survey data and content analysis of financial sustainability reports. The study demonstrated that stronger corporate governance practices were associated with higher quality and more comprehensive financial sustainability reporting, indicating a positive link between governance and business financial sustainability in Europe.

In Brazil, de Almeida, Ribeiro, and Godoy (2019) conducted a quantitative study focusing on listed companies in South America to investigate the relationship between corporate governance mechanisms and

environmental disclosure practices. The findings indicated that firms with stronger governance mechanisms were more likely to engage in environmental disclosure, suggesting a positive relationship between governance and sustainable environmental performance in South America. Mafini, King, and Okeahalam (2020) conducted a qualitative study in South Africa, employing interviews and case studies, to explore the role of corporate governance in promoting sustainable business practices in Africa. The study highlighted the importance of effective governance mechanisms in influencing social and environmental performance, emphasizing the positive impact of governance on business financial sustainability in African countries.

Wong, Wong, and Wong (2017) conducted a quantitative study in Hong Kong, focusing on the influence of board independence on firm financial sustainability in Asian countries. Utilizing panel data from Asian companies, the researchers found that board independence, as a corporate governance characteristic, positively affected firm financial sustainability. The study underscored the significance of independent boards in driving sustainable business practices in Asia.

Martinez-Ferrero (2018) conducted a quantitative comparative analysis study in Canada and the United States to examine the relationship between corporate governance and corporate environmental performance in North America. The findings demonstrated a positive relationship between governance practices and environmental performance in both countries, highlighting the contribution of effective governance to sustainable business practices in North America.

In conclusion, while the existing literature has explored the relationship between corporate governance practices and business financial sustainability in various regions worldwide, there remains a notable geographic and contextual gap in the context of SACCOs (Savings and Credit Cooperative Organizations) in the Greater Mbarara District. The selected studies in this literature review have primarily focused on larger corporations in Asia, North America, Europe, South America, and Africa, with limited emphasis on SACCOs in specific geographic areas. Therefore, the study gap lies in the need for research that specifically investigates the relationship between corporate governance practices, the operating environment, and the financial sustainability of SACCOs in the Greater Mbarara District. Such a study would provide valuable insights into the unique challenges and opportunities faced by SACCOs in this specific geographic and contextual setting, contributing to a more comprehensive understanding of how governance practices impact the financial sustainability of these important financial institutions.

The relationship between the operating environment and business financial sustainability: The operating environment plays a crucial role in shaping the financial sustainability of businesses. The operating environment encompasses the external factors and conditions in which businesses operate, including economic, social, political, legal, technological, and environmental aspects (Hitt et al., 2021). Business financial sustainability, on the other hand, involves the integration of social, environmental, and economic considerations into business strategies and practices to ensure long-term viability and success (Molina-Azorín et al., 2021). Understanding the relationship between the operating environment and business financial sustainability is essential for organizations seeking to thrive in dynamic and complex business landscapes. This literature review aims to explore the existing body of knowledge on the relationship between the operating environment and business financial sustainability, highlighting key findings and trends identified in studies conducted worldwide.

The economic factors within the operating environment significantly influence business financial sustainability. In a study by Acemoglu, Akcigit, and Kerr (2016), the authors examined the relationship between economic institutions and innovation. They found that countries with more inclusive economic institutions, characterized by strong property rights and low corruption, fostered innovation and long-term business financial sustainability. The presence of stable economic institutions encourages businesses to invest in research and development, leading to the development of sustainable practices and the creation of competitive advantages.
Similarly, Holtbrügge and Baron (2017) investigated the impact of economic globalization on corporate financial sustainability strategies. Their findings revealed that businesses operating in highly globalized economies were more likely to adopt financial sustainability practices to enhance their competitiveness and reputation. Globalization opens up opportunities for businesses to access new markets, collaborate with international partners, and tap into diverse resources. To stay relevant in the global marketplace, organizations

recognize the importance of integrating financial sustainability into their business strategies, enabling them to meet the growing demands of environmentally conscious consumers and investors.

In a study by Marques, Ferreira, and Santos (2020), the researchers explored the relationship between economic recessions and financial sustainability practices in organizations. They found that during economic downturns, firms faced significant challenges in maintaining their financial sustainability initiatives due to financial constraints and resource scarcity. However, resilient organizations strategically prioritized financial sustainability efforts, viewing them as long-term investments that would enhance their competitiveness and resilience in the post-recession period. By investing in sustainable practices even during economic hardships, businesses can position themselves for future growth and financial sustainability.

Furthermore, Wang and Sarkis (2018) conducted a study on the relationship between economic development and corporate environmental performance. Their research indicated that as economies grow and develop, businesses tend to allocate more resources towards environmental improvement and sustainable practices. Higher economic development provides companies with greater financial capacity to invest in clean technologies, environmental management systems, and employee training, leading to improved environmental performance and enhanced business financial sustainability.

In summary, economic factors within the operating environment have a significant impact on business financial sustainability. Inclusive economic institutions, economic globalization, the influence of economic recessions, and economic development all play crucial roles in shaping organizations' adoption of sustainable practices. Understanding and navigating these economic factors is essential for businesses seeking to align their strategies with financial sustainability goals and ensure long-term success in a dynamic and competitive economic landscape.

Social factors in the operating environment also play a vital role in shaping business financial sustainability. In a study by Rivera-Camino, Medina-Molina, and Ruiz (2018), the researchers explored the influence of social capital on the financial sustainability performance of firms. They found a positive relationship between social capital, characterized by trust, cooperation, and shared values, and the adoption of sustainable practices. Organizations with strong social capital networks, including relationships with employees, customers, suppliers, and local communities, are more likely to engage in sustainable business practices. These relationships foster collaboration, knowledge-sharing, and mutual support, enabling businesses to address financial sustainability challenges effectively.

Furthermore, Luo and Bhattacharya (2021) examined the effect of consumer awareness and demand for sustainable products on business financial sustainability. Their findings indicated that businesses responding to consumer demand for financial sustainability were more likely to achieve long-term success. As consumers become more environmentally and socially conscious, they seek out products and services from companies that align with their values. Organizations that proactively address consumer demands for sustainable products and adopt responsible business practices can enhance their brand reputation, attract a loyal customer base, and ultimately improve their business's financial sustainability.

In another study, Orlitzky, Siegel, and Waldman (2011) investigated the impact of corporate social responsibility (CSR) on financial performance. Their meta-analysis of over two hundred studies revealed a positive relationship between CSR and financial outcomes. Organizations that actively engage in CSR initiatives, such as philanthropy, employee well-being programs, and community involvement, tend to enjoy better financial performance. This suggests that businesses that prioritize social responsibility and integrate it into their core operations are more likely to achieve long-term financial sustainability.

Moreover, Hong, Zhang, and Zhou (2013) conducted a study on the influence of employee engagement on sustainable organizational performance. Their research demonstrated that organizations with high levels of employee engagement had better financial sustainability outcomes. Engaged employees exhibit higher levels of commitment, productivity, and innovation, leading to improved business financial sustainability. By fostering a supportive and inclusive work environment, organizations can enhance employee engagement and unlock their potential as drivers of sustainable practices.

In summary, social factors within the operating environment significantly impact business financial sustainability. Strong social capital networks, consumer demand for financial sustainability, corporate social responsibility, and employee engagement all contribute to the adoption and success of sustainable practices. Understanding and effectively managing these social factors is crucial for organizations seeking to enhance their social and environmental performance, build stakeholder trust, and ensure long-term business financial sustainability.

Political and legal factors within the operating environment have significant implications for business financial sustainability. In a study by Zhu, Sarkis, and Lai (2018), the researchers investigated the impact of government regulations on the environmental financial sustainability practices of manufacturing firms. They found that stringent environmental regulations prompted businesses to adopt sustainable practices and improve their environmental performance. The presence of strict regulations acts as a catalyst for organizations to invest in cleaner technologies, implement waste management systems, and reduce their carbon footprint. Government regulations provide clear guidelines and incentives for businesses to align their operations with environmental financial sustainability goals.

Additionally, Zhang, Hu, and Fan (2017) examined the role of political connections in corporate environmental performance. Their research revealed that firms with stronger political connections were more likely to engage in sustainable practices due to access to resources and favorable regulatory treatment. Political connections can provide businesses with valuable opportunities, including access to information, financial support, and favorable policy considerations. Organizations with political connections are more likely to receive support and incentives from governments to adopt sustainable practices, leading to improved environmental performance and enhanced business financial sustainability.

In another study, Hahn and Pinkse (2014) investigated the impact of voluntary environmental agreements (VEAs) on the financial sustainability performance of firms. VEAs are agreements between governments and businesses that aim to encourage and support voluntary adoption of sustainable practices. The researchers found that firms participating in VEAs exhibited better financial sustainability performance compared to non-participating firms. By voluntarily committing to sustainable practices, businesses demonstrate their proactive approach and commitment to environmental stewardship, which positively affects their reputation, stakeholder relationships, and overall business financial sustainability.

Moreover, Kolk, Kourula, and Pisani (2017) conducted a study on the influence of international institutions and agreements on corporate financial sustainability practices. Their research revealed that businesses operating in countries that have ratified international financial sustainability agreements tend to exhibit stronger financial sustainability performance. International agreements, such as the United Nations Global Compact and the Paris Agreement, set global financial sustainability standards and expectations. Businesses that operate in countries that actively endorse and implement these agreements are more likely to incorporate financial sustainability practices into their operations, supply chains, and reporting, thereby enhancing their overall business financial sustainability.

In summary, political and legal factors within the operating environment have significant implications for business financial sustainability. Strict government regulations, the role of political connections, voluntary environmental agreements, and international financial sustainability agreements all shape the adoption and implementation of sustainable practices. Understanding and navigating these political and legal factors are essential for organizations seeking to align their operations with regulatory requirements, gain access to resources, and enhance their overall financial sustainability performance.

Technological advancements and innovations in the operating environment have transformative effects on business financial sustainability. In a study by Bocken, Short, Rana, and Evans (2017), the authors explored the role of digital technologies in enabling sustainable business models. They found that digital technologies, such as the Internet of Things (IoT) and data analytics, facilitated resource efficiency, collaboration, and new revenue streams, thereby enhancing business financial sustainability. Through the integration of IoT devices and sensors, businesses can monitor and optimize resource consumption, reduce waste, and improve overall operational efficiency. Data analytics enable organizations to analyze large volumes of data to gain insights,

identify opportunities for improvement, and make informed decisions that support financial sustainability objectives. These digital technologies provide businesses with tools and capabilities to optimize processes, reduce environmental impacts, and drive long-term financial sustainability.

Moreover, Pagoropoulos, Pantelidis, and Koritos (2017) investigated the impact of renewable energy technologies on business financial sustainability. Their research highlighted that the adoption of renewable energy technologies contributed to environmental financial sustainability, cost savings, and improved competitiveness. With the increasing availability and decreasing costs of renewable energy sources such as solar and wind, businesses can reduce their reliance on fossil fuels and transition towards more sustainable energy alternatives. The adoption of renewable energy technologies not only lowers greenhouse gas emissions but also provides economic benefits through reduced energy costs and enhanced brand reputation as an environmentally responsible organization.

In another study, Boiral, Heras-Saizarbitoria, and Talbot (2017) examined the role of eco-design practices and eco-innovation in driving sustainable product development. They found that businesses that integrate eco-design principles into their product development processes can achieve higher levels of financial sustainability performance. Eco-design involves considering the environmental impacts of products throughout their lifecycle, from design and raw material selection to manufacturing, use, and disposal. By incorporating eco-design practices, organizations can minimize resource consumption, reduce waste, and develop products with improved environmental performance. Eco-innovation, on the other hand, focuses on developing new technologies, materials, and processes that contribute to environmental financial sustainability. The adoption of eco-design and eco-innovation practices allows businesses to differentiate themselves in the market, attract environmentally conscious customers, and improve their overall financial sustainability performance.

Furthermore, Shi, Sun, and Yang (2019) conducted a study on the influence of blockchain technology on supply chain financial sustainability. They found that blockchain technology enhances transparency, traceability, and accountability in supply chains, thereby supporting sustainable practices. By utilizing blockchain, businesses can improve supply chain visibility, track the origin and financial sustainability credentials of products, and ensure ethical sourcing practices. The increased transparency and trust facilitated by blockchain technology enable organizations to address social and environmental challenges in their supply chains and enhance overall supply chain financial sustainability.

In summary, technological advancements and innovations have transformative effects on business financial sustainability. Digital technologies enable resource efficiency, collaboration, and new revenue streams, while renewable energy technologies contribute to environmental financial sustainability and cost savings. Eco-design and eco-innovation practices drive sustainable product development, and blockchain technology enhances supply chain financial sustainability. Embracing and leveraging these technological factors enables organizations to enhance their environmental performance, reduce costs, and strengthen their overall business financial sustainability.

The natural environment, including climate change and resource scarcity, poses critical challenges and provides opportunities for businesses striving for financial sustainability. Extensive research has been conducted to understand the relationship between the natural environment and business financial sustainability, shedding light on various aspects and implications. For instance, Burbano, Delmas, & Cobo (2022) explored the connection between climate change strategies and financial performance. Their study revealed that companies implementing proactive climate change strategies not only contribute to environmental financial sustainability but also experience improved financial performance. This finding highlights the potential for businesses to achieve economic success while addressing climate change.

Furthermore, Pinkse (2019) conducted a study on corporate responses to climate change, uncovering how businesses can enhance financial sustainability through their actions. Their research emphasized that companies adopting climate change mitigation and adaptation strategies can drive operational efficiency, cost savings, and reputational gains. These findings underscore the importance of integrating climate change considerations into business strategies and operations to achieve long-term financial sustainability.

Moreover, Lüdeke-Freund, Froese & Schaltegger (2019) explored the relationship between corporate financial sustainability and resource efficiency. Their study demonstrated that businesses implementing resource-efficient practices, such as waste reduction, energy efficiency, and water conservation, can achieve positive financial outcomes while minimizing their environmental impact. Resource efficiency not only contributes to cost savings but also supports sustainable development by reducing resource consumption and waste generation.

In addition to climate change and resource efficiency, other aspects of the natural environment, such as resource scarcity, have also been investigated about business financial sustainability. Nevárez (2021) focused on the impact of resource scarcity on financial sustainability practices. Their research emphasized the need for businesses to adopt innovative strategies to address resource scarcity challenges, such as implementing sustainable resource management practices and exploring alternative sources. By doing so, companies can ensure their long-term financial sustainability and resilience in the face of resource limitations.

Furthermore, Chabowski, Mena, and Gonzalez-Padron (2011) examined the influence of environmental regulations on business financial sustainability. Their study highlighted the positive association between environmental regulation compliance and improved environmental performance. Adhering to environmental regulations not only helps businesses avoid legal and reputational risks but also drives them to adopt sustainable practices and technologies. This emphasizes the importance of regulatory frameworks in incentivizing businesses to integrate financial sustainability into their operations.

Overall, the natural environment presents both challenges and opportunities for business financial sustainability. By proactively addressing climate change, embracing resource efficiency practices, considering resource scarcity, and complying with environmental regulations, businesses can contribute to environmental preservation while achieving financial success. The findings from these studies highlight the significance of integrating financial sustainability considerations into business strategies, ultimately leading to long-term viability, enhanced reputation, and stakeholder value creation.

In conclusion, the existing literature on the operating environment, and financial sustainability of SACCOs in the Greater Mbarara District reveals a significant research gap. While studies have explored these topics in broader contexts, there is a dearth of research specifically focused on SACCOs operating in this geographic area. Further investigation is necessary to understand the unique challenges and opportunities faced by SACCOs in the district and to develop tailored strategies and policies that support their long-term financial sustainability. Bridging this study gap will provide valuable insights and recommendations for practitioners, policymakers, and stakeholders, ultimately enhancing the financial sustainability practices and overall performance of SACCOs in the Greater Mbarara District.

In conclusion, the combined effect of corporate governance and the operating environment on business financial sustainability is a multifaceted relationship. Effective corporate governance practices, in conjunction with a supportive operating environment, can enhance financial sustainability outcomes for organizations. Understanding the reciprocal influences between corporate governance and the operating environment is crucial for developing strategies and policies that promote sustainable business practices. Further research in this area should continue to explore the intricate interactions between corporate governance, the operating environment, and their impact on business financial sustainability. However, there is a study gap concerning the relationship between the variables in the context of SACCOs in the great Mbarara district. Therefore, this study will fill this gap.

3. Methodology

Research Design

This study employed a cross-sectional research design to examine the relationship between corporate governance practices, the operating environment, and the financial sustainability of SACCOs (Savings and Credit Cooperative Organizations) in the Greater Mbarara District. Cross-sectional study design is a type of observational study design. In a cross-sectional study, the investigator measures the outcome and the exposures of the study participants at the same time (Thomas, 2010).

Study Population and Sample Size

The research focused on Savings and Credit Cooperative Organizations (SACCOs) in the Greater Mbarara districts, totaling 164 SACCOs. SACCOs were chosen due to their role in financial services and community-level financial inclusion. Out of these, 116 SACCOs were selected based on the Krejicie and Morgan Table (1970). The study involved 348 respondents, three from each selected SACCO, comprising managers, board committee heads, and operations heads, who provided information on the study variables. simple random sampling was applied to select SACCOs from each district. Stratified sampling helped to ensure that each SACCO from each district is fully presented and simple random helps to avoid selection bias (Taherdoost, 2016).

Variables Definitions and Measurement Levels

Table 1: Operationalization and measurement of variable

Variable	Measures	Operationalization	Dimension	Source
Corporate Governance	Structure and Composition	Perceived effectiveness of board structure in terms of independence, expertise, diversity, and composition	Board composition	Adams, R. B., & Ferreira, D. (2009); Daily, C. M., Dalton, D. R., & Canella, A. A. (2003)
Corporate Governance	Transparency	The extent of disclosure of governance-related information to stakeholders, including financial and non-financial disclosures	Information disclosure on a 5-point Likert scale will be adopted	Gillan, S. L., & Starks, L. T. (2007); Ioannou, I., & Serafeim, G. (2017)
Corporate Governance	Risk Management	Implementation of risk management practices, including identification, assessment, and mitigation of risks	Risk management practices. a 5-point Likert scale will be adopted	Jensen, M. C. (2003); Judge, W. Q., & Zeithaml, C. P. (1992)
Corporate Governance	Stakeholder Engagement	Level of involvement and communication with stakeholders, such as shareholders, employees, customers, and the community	Stakeholder engagement. a 5-point Likert scale will be adopted	Mitchell, R. K., Agle, B. R., & Wood, D. J. (1997); Freeman, R. E. (1984)
Operating Environment	Political environment	Stringency and effectiveness of regulatory requirements impacting business operations, including compliance measures	Regulatory compliance. a 5-point Likert scale will be adopted	Vogel, D. (2008); Schuler, R. S., & Jackson, S. E. (2005)
Operating Environment	Technological environment	Intensity of competition and market concentration affecting business performance and strategy	Market competition. a 5-point Likert scale will be adopted	Porter, M. E. (1979); Barney, J. B. (1991)
Operating Environment	Socio-economic Factors	Influence of Economic stability, Social Development, and Cultural Factors on Business Operations and Financial Sustainability	Socio-economic context. a 5-point Likert scale will be adopted	Orlitzky, M., Schmidt, F. L., & Rynes, S. L. (2003); Carroll, A. B. (1991)
Operating Environment	Responsiveness	Ability to adapt and respond to changing market conditions and customer needs	Market responsiveness. a 5-point Likert scale will be adopted	Fornell, C., & Wernerfelt, B. (1987); Narver, J.

				C., & Slater, S. F. (1990)
Business Financial sustainability	Deposit mobilization	Assessment of the amount of deposits made by the clients.	Financial performance. A 5-point Likert scale will be adopted	Eccles, R. G., & Krzus, M. P. (2010); Ittner, C. D., & Larcker, D. F. (1997)
Business Financial sustainability	Size	Analysis of business growth metrics, including market share, expansion into new markets, and product diversification	Growth and expansion. a 5-point Likert scale will be adopted	Barney, J. B. (1991); Zahra, S. A., & Covin, J. G. (
	Return on Assets	Assessment of the amount of profit registered as return from the SACCOs assets.	Financial sustainability. A 5-point Likert scale will be adopted	Zahra, S. A., & Covin, J. G. (

Data Processing and Analysis

Data obtained from the questionnaires were coded, entered into a statistical software package, and analyzed using appropriate statistical techniques. Descriptive statistics, such as means and percentages, were used to summarize the data. Inferential statistics, including correlation analysis and regression analysis, were conducted to examine the relationships between variables.

4. Results of the study

Demographic characteristics of the respondents.

The demographics of the managers, head of the board committee and head of operations of SACCOs were distributed as indicated in Table 2.

Table 2: Demographic characteristics for the respondents that is managers, head of board committee and head of operations of SACCOs

Category	Item	Frequency	Percent
Age	26-35 years	35	10.9
	36- 45 years	153	47.5
	46-55 years	127	39.4
	56 years and above	7	2.2
Gender	male	252	78.3
	female	70	21.7
Education	Diploma/ Certificate	28	8.7
	Bachelors Degree	166	51.5
	Masters Degree	128	39.8
	Total	**322**	**100**

Primary Source Data 2023

The results in Table 2 indicate that In terms of age distribution, a notable 47.5% of the respondents fall within the 36-45 age bracket, indicating a substantial presence of mid-career professionals in these leadership roles. Those aged 46-55 years constitute 39.4%, suggesting a significant representation of experienced individuals in senior positions. The 26-35 age group comprises 10.9%, indicating a smaller percentage of younger individuals, while those aged 56 and above contribute 2.2%, representing a minority of senior executives.

Gender representation among these SACCO leaders shows a distinct imbalance, with males constituting the majority at 78.3%, while females make up only 21.7%. This gender disparity underscores an industry trend where men hold a predominant share of leadership positions within SACCOs.

Educationally, the respondents exhibit a high level of formal education. Those with a diploma or certificate constitute 8.7%, indicating a limited presence of individuals with lower-level formal education. A significant 51.5% hold a bachelor's degree, signifying a majority with undergraduate qualifications. Furthermore, a substantial 39.8% have pursued a master's degree, suggesting a well-educated cohort in leadership roles within SACCOs. This educational profile aligns with the complex financial and managerial demands of SACCOs, emphasizing the importance of advanced education in these leadership positions.

Demographic characteristics of the Saccos.
The demographics of the SACCOs were distributed as indicated in Table 3.

Table 3: Demographic characteristics of the Saccos

Age of Sacco	Less than 1 year	2	1.9
	1-3 years	17	15.9
	4-6 years	54	50.4
	7-10 years	29	27.1
	More than 10 years	5	4.7
	Total	**107**	**100**

The distribution of the Saccos is based on the age of the Sacco, which reveals that the majority, 50.4%, have been in existence for 4-6 years. 7-10 years and 1-3 years follow closely, constituting 27.1% and 15.9% of the sample, respectively. A smaller proportion, 4.7%, have been in existence for more than 10 years, while less than 1-year accounts for 1.9 % of the Saccos.

Pearson Correlation Matrix
Pearson's Correlation analysis was conducted to measure the strength of linear associations between the study variables and is denoted by r.

Table 4: Correlation Results

	1	2	3	4	5	6	7	8	9	10	11	12
Structure and Composition-1	1											
Stakeholder Engagement-2	.129*	1										
Corporate governance practices 3	.774**	.728**	1									
Political environment 4	.181**	.319**	.329**	1								
Social environment 5	.198**	.606**	.524**	.375**	1							
Technological environment 6	.333**	0.082	.283**	.183**	.112*	1						
Economic environment 7	.036	.525**	.360**	.285**	.463**	.134	1					
Operating Environment-8	.270**	.589**	.563**	.716**	.720**	.458**	.709**	1				
Return on Assets-9	.313**	.178**	.330**	.387**	.430**	.249**	.176**	.461**	1			
Organizational size-10	.424**	.173**	.403**	.144**	.153**	.164**	.207**	.258**	.165**	1		
Deposit Mobilization-11	.538**	.368**	.607**	.246**	.240**	0.052	.458**	.400**	0.032	.597**	1	
Financial sustainability-12	.598**	.347**	**.635****	.325**	.338**	.178**	.415**	**.488****	.391**	.844**	.864**	1

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Relationship between corporate governance practices and SACCO financial sustainability in the Greater Mbarara region.

The results in Table 4 indicate that there is a positive significant relationship between corporate governance practices and SACCO financial sustainability in the Greater Mbarara region (r=.635, p<.01). This implies that any positive change in corporate governance practices will result in a positive change in SACCO financial sustainability in the Greater Mbarara region.

The relationship between the operating environment and SACCO financial sustainability in the Greater Mbarara region.

The results in Table 4 indicate that there is a positive significant relationship between the operating environment and SACCO financial sustainability in the Greater Mbarara region (r=.488, p<.01). This implies that any positive change in the operating environment will result in a positive change in SACCO financial sustainability in the Greater Mbarara region.

Multiple regression analysis

A multiple regression analysis was run to explain the predictive power of the independent variables to the dependent variable and to show the causal relationship among the study variables.

Table 5: Multiple regression analysis

Coefficients a

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.091	.192		.472	.637
	Corporate governance practices	.613	.055	.528	11.233	.000
	Operating Environment	.278	.068	.191	4.074	.000

a Dependent Variable:: Financial sustainability

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.655 a	.429	.426	.41641

a Predictors: (Constant), Operating Environment, Corporate governance practices

The regression analysis results reveal the presence of significant relationships between corporate governance and the operating environment on SACCO's financial sustainability in the greater Mbarara region. The significance rate, as indicated by the p-values, provides crucial information about the statistical significance of these relationships.

Corporate governance has a positive significant relationship with SACCO financial sustainability in the greater Mbarara region (Beta=.528, p<.05). Thus implying that a unit increase in corporate governance is associated with a significant increase of 0.528 in SACCO financial sustainability in the greater Mbarara region. Likewise, the operating environment has a positive significant relationship with SACCO financial sustainability in the greater Mbarara region (Beta=.191, p<.05). This implies that a unit increase in corporate governance is associated with a significant increase of 0.191 in SACCO financial sustainability in greater Mbarara region.

In summary, the analysis demonstrates a statistically significant relationship between both corporate governance and the operating environment with SACCO's financial sustainability in the greater Mbarara region. These findings underscore the importance of considering and enhancing these factors to improve financial sustainability. Finally, the regression results indicate that 42.6% (Adjusted R Square=.426) of the variations in financial sustainability are explained by corporate governance and operating environment, thus implying that the remaining 57.4% is explained by other factors not considered in this study.

Discussion of Findings

The study reveals that corporate governance and the operating environment jointly account for 42.6% of the predictive power of SACCO financial sustainability in the Greater Mbarara region, indicating a statistically significant positive relationship. This underscores the importance for SACCO managers to actively engage in corporate governance and analyze the operating environment to enhance financial sustainability in the region. These findings align with Rivera-Camino et al. (2018), who found a positive association between social capital and sustainable practices, emphasizing the role of social relationships and trust in influencing corporate governance and financial sustainability. Additionally, technological advancements can shape corporate governance practices and the operating environment. García-Granero, Piedra-Muñoz, & Galdeano-Gómez, (2020) highlighted the role of eco-innovation in improving environmental and economic performance, demonstrating the potential of technology to enhance financial sustainability.

Moreover, the study's findings are consistent with Geng, Lai, & Zhu (2021) who investigated corporate governance's impact on corporate social performance in China, revealing a positive relationship between good governance practices and financial sustainability. Goel, Lagos, & López (2024) also found that governance mechanisms, such as board independence and environmental committees, positively influence environmental performance. Similarly, Azam, Elahi, & Haque (2023) emphasized the significance of both internal corporate governance mechanisms and external factors, like regulatory and market conditions, in shaping financial sustainability outcomes, particularly in emerging economies.

5. Conclusion and Recommendations

The study underscores the significant influence of corporate governance practices on SACCO financial sustainability in the Greater Mbarara region, supported by both correlation and regression analyses. Enhancing governance through improved structure, composition, and stakeholder engagement can drive financial sustainability. Moreover, the study emphasizes the pivotal role of the operating environment spanning political, social, technological, and economic factors in shaping SACCO financial outcomes. Together, corporate governance and the operating environment jointly account for 42.6% of the variance in financial sustainability. To fortify these aspects, fostering transparent communication with leadership, engaging experts in governance and environmental analysis, and implementing continuous monitoring and benchmarking are recommended. These measures aim to bolster SACCO's financial sustainability effectively in the Greater Mbarara region.

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Entrepreneurial Networking and Performance of Ugandan Manufacturing SMEs: The Mediating Role of Innovation Capabilities

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Abstract: This study investigates the potential impact of innovation capacities on the relationship between entrepreneurial networking and the performance of small and medium-sized manufacturing enterprises (SMEs) in Mbarara City. The target population of the study was 248 SMEs, according to MoFPED (2022). 205 SMEs were obtained when the sample size was calculated using Krejcie and Morgan's (1970) tables. With 186 respondents and SMEs, the response rate was 91%. Data was collected using a cross-sectional research design. To determine the mediating link, the four stages of Baron and Kenney (1986) was completed and every direct influence of the research variables had to meet a substantial requirement. The prerequisites were met and there was a significant direct association (Beta=0.673; p<.01) between entrepreneurial networking and SMEs' performance. Furthermore, there was a direct substantial association (Beta=0.437; p<.01) between innovation capabilities and the performance of SMEs, and a significant correlation (Beta=0.166; p<.01) was found between entrepreneurial networking and innovation capabilities. The association between entrepreneurial networking and the performance of SMEs decreased from Beta=0.673 to Beta=0.617 when innovation capabilities were taken into account, although the relationship remained statistically significant. This suggests that the relationship between entrepreneurial networking and performance of SMEs is mediated by innovative capabilities. The model's indirect outcome is given by the percentage of 8.32%, indicating that 91.68% explains the direct effect. The study advises policymakers to encourage SMEs to innovate and promote entrepreneurial networking by organizing workshops/seminars where entrepreneurs can interact with each other and thus boost their innovativeness which will enhance SME performance.

Keywords: *Performance, Ugandan Manufacturing SMEs, entrepreneurial networking, innovative capabilities*

1. Introduction

Significant economic growth and development are attributed to Small and Medium-sized Enterprises (SMEs), which are integral to the global economy (Eikelenboom & De Jong, 2019; Turyahebwa et al., 2013). A company with fewer than 50 employees and a turnover of between 10 million and 50 million Ugandan Shillings is classified as an SME. This definition aligns with that of Kasekende and Opondo (2003), forming the basis of our study on a manufacturing SME.

SME operations have significantly impacted the economies of both industrialized and developing nations in recent years. Estimates from the Uganda Bureau of Statistics (2019) show that SMEs employ over 45% of the country's labor force and account for more than 20% of the GDP. SMEs are acknowledged as major forces behind regional growth (Donkor et al., 2018; Pucci et al., 2017), income distribution, resource utilization, and innovation on a worldwide scale (Maldonado - Guzmán et al., 2019). They also play a significant role in promoting socio-economic development and reducing poverty through GDP growth and employment creation. SMEs which make up 90% of the private sector, are the main drivers of Uganda's economy (Al Mamun et al., 2016). These enterprises, particularly manufacturing, trade, service, and agriculture, contribute to economic growth, transformation, and employment generation (Orobia et al., 2020). Despite their significant role, many SMEs in Uganda have struggled with poor performance and even closure. This study examines how entrepreneurial networking and innovation could enhance the performance of SMEs to address this problem.

In this instance, performance will be characterized as an SME's capacity to create plans via its networks of entrepreneurs that facilitate the accomplishment of operational objectives. Financial metrics like profitability and cash flow, as well as non-financial metrics like reputation and customer loyalty, can be used to evaluate performance (Cho et al., 2019). Since many small firms in Uganda have short lifespans (MTIC, 2015) and there is a dearth of trustworthy financial records, we will use non-financial metrics including client retention, internal procedures, and learning and growth (Sebikari, 2014) to gauge performance.

Globally, small and medium-sized firms (SMEs) performance is evaluated mostly based on entrepreneurial networking (Anwar & Ali-Shah, 2020). Small enterprises can produce resources essential to their performance through these formal and/or informal networks (Mayanja et al., 2019). According to Abu-Rumman et al. (2021), the establishment of social links between business managers and external stakeholders fosters trust within the organization. This, in turn, promotes information exchange and raises the prospect of improved firm performance. This collaboration has fostered the growth of many SMEs, making entrepreneurial networking a crucial variable in this study.

According to O'Regan and Ghobadian (2016), new products or processes that meet consumer needs more profitably and competitively than those that already exist are indicative of business innovation capabilities from the perspective of small and medium-sized enterprises. In this study, we use the word innovation capabilities to refer to the effective implementation of innovative solutions to difficulties faced by manufacturing SMEs, including applying new ideas concerning the SMEs' goods, structures, and processes.

Innovation, according to Rexhäuser and Rammer (2014), is the introduction of new or significantly enhanced organizational strategies, marketing tactics, products, and procedures that bring value to the business. Schumpeter (1942) asserted that small enterprises must be creative to adapt to the changing demands of their clientele and perform at their best. Innovation and small business performance are positively correlated (Ramadani et al., 2019). To obtain a competitive edge, a business needs to innovate. As the business climate becomes increasingly uncertain (Hanelt et al., 2021), entrepreneurs must adapt by becoming inventive (Guerrero-Villegas et al., 2018) or risk becoming outdated (Zhang et al., 2019). As a result, for businesses to remain competitive, they need to be able to identify, anticipate, and creatively satisfy customer needs.

One could argue that innovation and entrepreneurial networking improve SME performance. Regarding innovation's mediating function in the connection between entrepreneurial networking and SME performance, there isn't enough research, though. The majority of research on innovative networking and entrepreneurship has been conducted in developed economies. To investigate this mediating role, this study emphasizes the contextual and holistic elements from the standpoint of the developing economy. This will assist business owners in realizing the value of strengthening their networks of connections and unleashing their creative potential to create new and improved products and services that will be essential to raising their level of performance.

2. Literature Review

This study examines performance-enhancing tactics used by Mbarara City's manufacturing SMEs through the lens of networking theory. According to networking theory, entrepreneurial networking can help SMEs perform better (Johanson & Mattsson, 1988). The individuals and recommendations in their business networks make up these entrepreneurial networks. According to Centeno and Carmichael (2014), entrepreneurial networks are the formal or informal cooperative relationships that business owners and managers develop with their institutional, social, and business contacts to obtain resources that are essential for improving the performance of their organizations. Furthermore, they have individuals with whom they have an indirect relationship or who they know through others (Aladejebi, 2020). By using these networks, business owners can draw in and keep clients to expand their clientele (Engel et al., 2017).

According to Schumpeter (1942), to boost performance and expand their customer base, SMEs need to create new or significantly enhanced goods and services. This is accomplished through "creative destruction," where new products, markets, processes, and organizations replace their predecessors (Kraehe, 2019; Langroodi, 2021). As such, Schumpeter's ideas align with the study, which suggests that entrepreneurs must continually innovate to achieve better business performance.

According to Schumpeter's arguments in 1972, innovation in SMEs directly results from entrepreneurial networks that contribute to improved performance. Schumpeterian theory suggests that SME owners can acquire vital business opportunities, skills, and knowledge needed to unlock their innovative potential through these networks. The collaboration and social ties among business owners allow them to share ideas and thoughts and visit innovative firms to gain exposure and knowledge. They can create new plans, goods, services,

procedures, and marketing methods that support small firms in achieving high performance by using this vicarious learning. This theory is supported by Hilmersson (2021), who highlights the significance of these tactics in SMEs. According to Bakas et al. (2019), these networks aid in the expansion and growth of small firms.

When entrepreneurial networks are devoted to developing a progressive culture or offering capital for the commercialization of an idea, service, or strategy that has the potential to transform the world, they are more beneficial to firms (Zhang et al., 2019; Ha et al., 2022). According to Abu-Rumman et al. (2021), entrepreneurial networks must build ties with a variety of stakeholders over the short- and long-term. These connections help small firms understand the demands of their clients (Zheng et al., 2020) and create new or significantly enhanced goods and services that boost small business performance (Cárdenas, 2021). Thus, entrepreneurial networks improve small enterprises' performance through innovation.

While Aboelmaged (2014) asserts that innovation mediates the relationship between knowledge, management capacity, and operational success, Mayanja et al. (2019) contend that innovation is a tool its predecessors used to influence results rather than an end in and of itself. Anning-Dorson (2018) also asserts that innovation mediates the relationship between engagement capability and service company performance. Moreover, including organizational, product, and process innovation is a mediator between adaptability and success in the organization, claim Camison and Lopez (2010).

Likewise, this research suggests that innovation's ability to comprehend the business environment in which it operates may act as a mediator in the relationship between entrepreneurial networking and SME performance. SME owners need to be more flexible in their innovation and build the right networks to attain the desired improved performance. Therefore, the study generated the hypothesis, (H1): Innovation capabilities mediate the relationship between entrepreneurial networking and SME performance in Uganda. This is due to a lack of data supporting the idea that innovation capabilities play a mediating role in the association between entrepreneurial networking and SME performance in Mbarara City's manufacturing sector.

3. Methodology

The study used a cross-sectional research design with a correlational approach and a quantitative analysis. Cross-sectional research design was chosen because it allowed us to understand the variables being studied simultaneously. The correlational research design assessed the relationships among the study variables while focusing on phenomena at a specific time. This facilitated evaluating the hypothesized relationship between entrepreneurship networking, innovation capabilities, and SMEs' performance in Mbarara City.

A total of 248 manufacturing SMEs in Mbarara City that were registered were the target population (MoFPED, 2022). Given their superior capacity for innovation in comparison to other Mbarara City businesses, manufacturing SMEs were given preference during the selection process. The study used purposive sampling to choose its sample and used Krejcie and Morgan's (1970) tables to determine sample size. Out of 248 SMEs, 205 SMEs in the sample size had responses, yielding a 91% response rate of 186 responses. Owners and managers were the unit of inquiry, and SMEs were the unit of analysis.

4. Results

Demographic characteristics of the owner/manager of SMEs

Table 1 shows the distribution of demographics among Mbarara City's SME owners and managers.

Table 1: Demographic characteristics of the owner/manager of SMEs in Mbarara City

Category	Item	Frequency	Percentage
Gender			
	Male	85	45.6
	Female	101	54.4
Age			
	20-29	87	46.8

	30-39	55	29.6
	40-49	30	16.1
	50 and above	14	7.5
Religion			
	Anglican	54	29
	Moslem	67	36
	Catholic	24	12.9
	Pentecostal	37	19.9
	Seventh-day Adventist	4	2.2
Marital Status			
	Married	52	28
	Single	34	18.2
	Cohabiting	64	34.4
	Divorce	28	15.1
	Widowed	8	4.3
Highest level of education			
	Certificate	125	67.2
	Diploma	28	15.1
	Degree	16	8.6
	Professional Qualifications	4	2.2
	Post Graduate	9	4.8
	Masters	3	1.6
	PhD	1	0.5
	Total	**186**	**100**

Source: Primary data, 2024

The gender distribution in Uganda's SME sector or the sampling procedure employed in the study may be to blame for the relatively larger percentage of women (54.4%) than males (45.6%) in the sample, according to the study's findings. Furthermore, over 75% of the respondents were in the 20–39 age group, indicating that young people made up the majority of the sample. This suggests that young entrepreneurs are the main players in the SME sector, looking for challenges and possibilities in the market.

The study also reveals that a sizable portion of the sample was made up of individuals from various religious origins, including Muslims (36%) and Anglicans (29%). This suggests that the SME sector is open to and accommodating of a wide range of faiths and beliefs. The findings show that cohabiting (34.4%) and married (28%), the two most common marital statuses among the respondents, indicate that the SME sector contains some stable and non-traditional family structures, which may affect the social and economic well-being of SME managers and their dependents.

The study also reveals that certificates (67.2%) were the most prevalent level of education among the respondents, followed by diplomas (15.1%) and degrees (8.6%). These findings suggest that a moderate level of formal education is necessary for the SME sector, although a high academic qualification is not always required. Lastly, the data show that the sample's proportion of postgraduate, professional, master's, and PhD holders was low, indicating that highly educated people might not find the SME sector to be particularly appealing in terms of chances or incentives.

Demographic characteristics of SMEs

The distribution of SME owners' demographics in Mbarara City is shown in Table 2.

Table 2: Demographic characteristics of SMEs in Mbarara City.

Category	Item	Frequency	Percentage
Ownership structure			
	Sole Trader	9	4.8
	Partnership	42	22.6
	Limited Company	135	72.6
Trading period of business			
	Less than 1 year	96	51.6
	1-2 years	37	19.9
	3-5 years	12	6.5
	6-10 years	27	14.5
	More than 10years	14	7.5
Number of Employees			
	Less than 10	129	69.4
	10-19	45	24.2
	20-29	12	6.4
	Total	**186**	**100**

Source: Primary data, 2024

This table presents insightful information on the demographic characteristics of SMEs in Mbarara City. The data indicates that Limited Companies comprise the majority of SMEs in the city, accounting for 72.6% of the total sample. However, there are also Sole Traders (4.8%) and Partnership structures (22.6%), implying that potential business owners should consider various ownership options.

Notably, over half of the SMEs in Mbarara City have been in operation for less than a year (51.6%), indicating a need for support programs, mentorship, and resources to help new businesses succeed. Additionally, only a small percentage of businesses have managed to operate for over a decade (7.5%), highlighting the challenges of sustaining a business in the current economic climate. Furthermore, most SMEs in Mbarara City have fewer than ten employees (69.4%). This underscores the importance of policies and programs to create jobs and promote entrepreneurship to impact the local economy significantly.

Table 3: Tests of mediation to determine how innovation capabilities influence the relationship between entrepreneurial networking and SMEs' performance

Steps	Regressions	B	SE	Beta
IV&DV	EN—PCS	0.589	0.048	0.673
IV&MV	EN—IC	0.178	0.078	0.166
MV&DV	IC---PCS	0.358	0.054	0.437
IV, MV&DV	EN & IC—PCS	EN=0.540	EN=0.043	EN=0.617
		IC=0.274	IC=0.041	IC=0.334
		Part correlations	EN=0.609	
			IC=0.330	
		R Square	0.562	
		N	186	

EN= Entrepreneurial Networking, IC= Innovation Capabilities, PCS= Performance of SMEs

Both entrepreneurial networking and the performance of SMEs were significantly impacted directly (beta=.673; p<.01). This shows that for every unit increase in entrepreneurial networking, the performance of SMEs increased by 0.673 units while keeping other variables constant. This effect is statistically significant at

the 1% level. The influence on entrepreneurial networking and innovation capabilities was significant (Beta=.166; p<.01). Furthermore, a noteworthy and direct impact was noted on SMEs' performance concerning their innovation capabilities (Beta=.437; p<.01).

The direct correlation between entrepreneurial networking and SME performance dropped from Beta=.673 to Beta=.617 when innovation capabilities were taken into account, but it was still statistically significant. This shows that the association between entrepreneurial networking and the performance of SMEs decreased but remained statistically significant even after accounting for innovation capabilities. This shows a partial mediation in the relationship between SMEs' performance and entrepreneurial networking through innovation capabilities. This indirect effect (partial mediation) makes up 8.32% (0.056/0.673 x 100) of the model; meaning 91.68% of the model that explains the direct effect is attributed to other factors. This could imply that SMEs with strong innovation capabilities are more likely to benefit from their entrepreneurial networking activities and perform better than those with weak innovation capabilities. As a result, we agree with the study's hypothesis, which holds that innovation capacities play a mediating role in the relationship between entrepreneurial networking and SMEs' performance in Uganda.
In addition, the results were shown on the path diagram, as may be seen below.

Figure 1: Using a med-graph to examine how Innovation Capabilities mediate the relationship between SMEs' performance and entrepreneurial networking

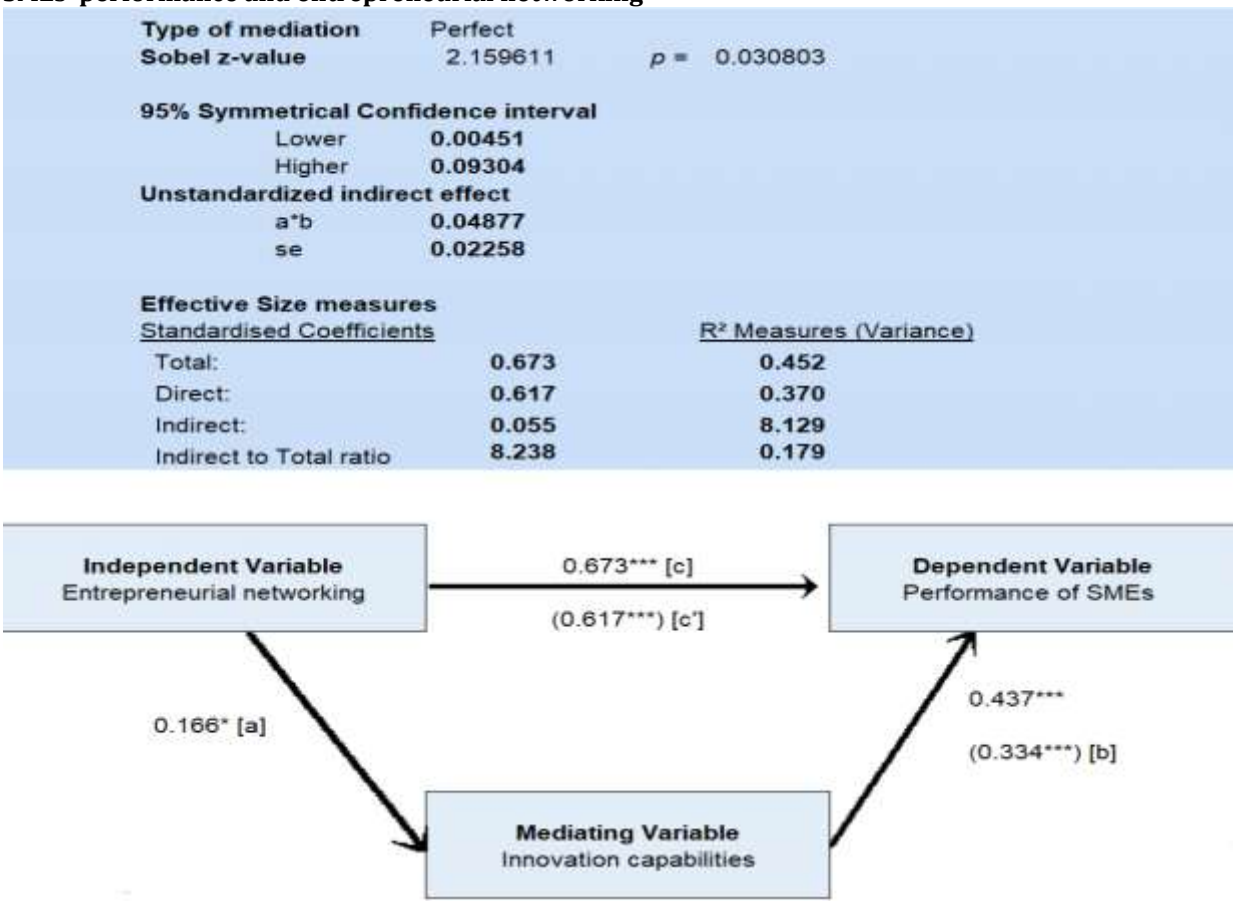

Figure 1 suggests that the relationship between the performance of SMEs and entrepreneurial networking is mediated by innovation capabilities. The med-graph indicates a positive correlation between entrepreneurial networking and the performance of SMEs, implying that improved networking can enhance a firm's success. The existence of innovation capabilities strengthens this relationship even further.

The presence of innovation capabilities helps SMEs to develop and apply new ideas, products, and services that

can differentiate them from competitors. This augments performance and creates a competitive advantage. Innovation capabilities also help SMEs to effectively utilize the resources acquired through entrepreneurial networking, further strengthening the positive relationship between networking and performance. Therefore, it can be concluded that innovation capabilities are an essential factor mediating the relationship between SMEs' performance and entrepreneurial networking. SMEs with strong innovation capabilities are likely to benefit more from entrepreneurial networking and stand better chances of bettering their overall performance.

Discussion

The study identifies the significant predictors of SME performance, which are entrepreneurial networking (EN) and innovative capabilities (IC). The findings reveal that positive changes in EN and IC lead to a positive outcome in SME performance. As a result, small business owners and managers should concentrate on building trust through entrepreneurial relationships, as this will enhance staff development, internal processes, and client retention, all of which will contribute to increased business performance. The findings also show a favorable correlation between IC and SME performance in terms of new processes, products, and organizations. Therefore, SME owners need to create entrepreneurial networks that foster innovation, leading to high SME performance.

The study's theoretical framework is based on Schumpeterian Theory and Network Theory, which support the study's EN and IC variables. Both theories consistently identify EN and IC as antecedents of SME performance. As reflected in the study's findings, innovative and networking SMEs perform better than their counterparts. Thus, SMES must establish entrepreneurial networks as a basis for the development of new products/services and the improvement of processes which will ultimately lead to performance enhancement.

Furthermore, our results support earlier research on the mediating role of innovative capabilities. Camison and Lopez (2010) claim that the integration of organizational, product, and process innovations has a favorable impact on an organization's performance and adaptability. Similarly, Mpando (2015) found that innovation influences the networking-performance relationship in a discernible way. This implies that if entrepreneurial networks are to improve business success, innovation should come first. Additionally, Aboelmaged (2014) suggested that the relationship between operations performance and knowledge management competency is mediated by innovation capabilities. Anning-Dorson (2018) also demonstrated that innovation plays a mediating role in the relationship between participation capability and service businesses' performance. Thus, to promote high performance and obtain a competitive edge in the market, small and medium-sized business owners should concentrate on innovation and entrepreneurial networking.

5. Contributions, Conclusion and Recommendations

Contributions of the Study

The topic of entrepreneurial networking, innovation capabilities, and SME performance has been subject to several debates. This study aims to contribute to this ongoing conversation and add to the existing body of knowledge. Practitioners globally recognize the value of SMEs as promoters of economic development. The study aligns with the United Nations Sustainable Development Goal (SDG 8) of 2030, which promotes sustained inclusive and sustainable economic growth and full employment for all.

The findings of this study are expected to inform SME owners/managers about the importance of enhancing their entrepreneurial networking and innovation capabilities to improve their businesses' performance. Policymakers such as the government and the Ministry of ICT can also benefit from the numerous innovations that SMEs create.

From a methodological standpoint, the main target audience was SMEs. Their experiences with entrepreneurial networking and innovation capacities were the subject of unbiased and critical feedback, which produced creative insights to guide policy regarding what needed to be done to enhance SME performance. Lastly, the study presents a topic that has gotten little attention: the role of innovation capacities in mediating the relationship between entrepreneurial networking and SMEs' performance in Uganda.

Conclusion and Implications

The purpose of this study was to determine how innovation capabilities and entrepreneurial networking skills affected the performance of SMEs in Mbarara City, Uganda. It employed a questionnaire with 186 owners and managers of SMEs as respondents. The findings imply that innovation capabilities and entrepreneurial networking are important indicators of SMEs' performance. The study also demonstrates how innovation acts as a mediating factor in the relationship between entrepreneurial networking and SME performance.

This study benefits the business community, policy, and scholarly research. It adds to the body of knowledge regarding how innovative and entrepreneurial networking skills affect the performance of small and medium-sized enterprises in Mbarara City, Uganda. The study also emphasizes how crucial innovation is in mediating the link between SME performance and entrepreneurial networking. Therefore, to improve the performance of their businesses, SME owners must create both official and informal networks. This will address changing client needs, and develop new products, services, and procedures for their businesses. Further, the study advises policymakers to encourage entrepreneurial networking by organizing workshops and seminars where entrepreneurs can interact with each other and thus boost their innovativeness which will enhance SME performance.

This study has its limitations, just like any other. For example, in the link between entrepreneurial networking and SME performance, the partial mediation caused by innovation capabilities is 8.32%, implying that 91.68% of the direct effect is due to other factors. Future studies should examine other variables that affect SMEs' performance in Uganda. Nonetheless, this study presents empirical evidence on the influence of entrepreneurial networking and innovation capabilities on the performance of SMEs using data from Mbarara City, Uganda.

Future research should examine larger and more representative samples, experimental or longitudinal designs, secondary or objective data sources, and more reliable regression models. The study acknowledges the challenges and limitations related to the design, including the cross-sectional design, limited sample size, self-reported measures, and bias resulting from the omitted variable. The study suggests that future research looks at other factors that can have an impact on the performance of SMEs. Lastly, the paper proposes that a longitudinal design analyzing the factors in this study will assist in demonstrating how having more networks and, consequently, more innovations, will affect performance over time.

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e-Shopping Behavior: An Empirical Study of Malaysian Consumers

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Abstract: Malaysia's e-commerce industry has grown tremendously, and many activities have been made online. One of the most common activities is online shopping or e-shopping. Online shopping behavior is the actions and decisions of customers when making purchases and completing transactions through Internet-based platforms. Consumer preference for online shopping is because it offers ease of buying or convenience, time-saving, price sensitive, anywhere-anytime, cost-effective, and other categories availability. Thus, this study investigated a few factors that affect Malaysian consumers' online purchase behavior: information availability, social influence, and trust. The researcher used an online survey and a self-administered questionnaire to gather data on the phenomenon. Data were collected from 297 Malaysian respondents using convenience sampling and analyzed using IBM Statistical Package for the Social Sciences (SPSS) 26.0 version software. The results revealed that all independent variables (information availability, social influence, trust) had a significant positive relationship with the dependent variable (online shopping behavior). This study also proved that information availability was the most influential factor compared to other variables. It is hoped that this study will benefit Malaysian marketers as it focuses on the Malaysian context. This finding will also help e-retailers enhance their online sales by creating a strategy that could attract more customers as a concern for building profitable relationships.

Keywords: *Online shopping, information availability, social influence, trust, Malaysian consumers*

1. Introduction

Malaysia's pandemic reveals a desire to adapt to the changing behavior of the digital platform at a rapid rate. Individuals' lifestyles have shifted from traditional to digital ways of doing things, and life would be impossible without the internet, which people previously used to share information. Commonly, people buy goods or services from e-commerce platforms as it is comfortable to buy the needed goods as it is time-consuming, less traffic jams, and energy saving.

E-shopping, known as online shopping, refers to buying and selling goods over the Internet or e-commerce. E-commerce allows customers to find all their desired items in one place. Thus, customers can select from a wide range of goods and services when buying online. Based on the data provided by Malaysia eCommerce Statistics and Trends in 2024 (commissionfactory.com), Malaysia gained 362,000 new digital consumers between 2022 and 2023. Amongst all the internet users, 9 out of 10 are currently digital consumers and 61.3% of Malaysian internet users buy at least one product or service online every week.

Nathan et al. (2021) mentioned that Lazada, one of the online shopping platforms that attract Malaysian consumers, has experienced an increase of 80% in orders placed compared to the pre-pandemic. Meanwhile, in 2023, a survey made on online consumer behavior in Malaysia shows that fashion remains the top category of items purchased by the respondents. The second most popular is groceries, with 38 percent of respondents mentioning that they bought groceries on e-commerce platforms (Statista Research Department, 2024).

Problem statement

Due to the COVID-19 pandemic, consumers have shifted to online stores to purchase products and services. They spend more time at home, leading them to buy items online (Ismail et al., 2020). This is supported by Naseri (2021), who stated that 80 percent of Malaysians purchased online during the pandemic.

Most of the stores post their unique products and services on digital platforms, thus attracting customers to buy. However, some people have doubts about making buying decisions as they cannot see and touch the goods directly. Thus, personal experience is important in influencing the purchase that products and to minimize

potential loss, they just try to buy cheaper of them. This situation makes traditional shopping still popular among customers and online shopping is perceived negatively (Junhan, 2023). Besides, the study by Daroch et al. (2021) mentioned that buyers were in favor of traditional shopping as the information about products stated in online stores is not satisfactory for them in making purchase decisions.

A similar situation goes for social influence in which some consumers seem not affected by social conditions around them. Tarhini et al. (2018) found that consumers are more likely to depend on themselves rather than others in deciding to use or reject a new system.

Despite so many advantages, using e-shopping generally requires customers to disclose their personal information. Nevertheless, some customers are reluctant to reveal their personal data on targeted websites as it is confidential, worried it will be misused by any parties. Referring to online shopping, Daroch et al. (2021) found that the transaction between buyer and seller does not involve face-to-face interaction, which makes it non-socialized, hence the buyer is sometimes unable to develop trust. Some customers may feel that online shopping is risky and not trustworthy. In 2020, in line with technological advancement, most customers shifted their traditional shopping behavior virtually, unfortunately, it was reported that fraud cases in online shopping reached nearly 70% (Hoh, 2020).

Thus, this study aimed to explore the factors affecting online shopping behavior among Malaysian consumers. And identify the most important factor that influences online shopping behavior among Malaysian consumers.

2. Literature Review

Online Shopping

Wong et al. (2024) define online shopping behavior as the actions and decisions of customers when making purchases and completing transactions through internet-based platforms. This behavior is shaped by various factors, including convenience, accessibility to information, pricing, product variety, and the ability to compare options.

Waqas and Wu (2023) reviewed 30 research studies published between 2020 and 2022 in databases “Scopus and Web of Science” associated with the benefits and challenges of online shopping from the perspective of customers during the COVID-19 pandemic. This study revealed that the factors of time-saving, convenience, accessibility, interactive services without physical boundaries, trust, website attractiveness and cost-saving motivated customers to shop online during the COVID-19 pandemic. However, financial scams, privacy concerns, poor quality of products and services, fraud promotions and decreased social interaction were challenging factors that hindered the development of online shopping.

Regitha et al. (2021) found that brand loyalty, visual merchandising, decision factors, product attributes, and discounts can affect user's e-shopping behavior. This study was done on Shopee users among students of International Business Administration (IBA) in Unsrat, Indonesia regarding their actions on online shopping.

Relationship between information availability and online shopping behavior

A study by Al Hamli & Sobaih (2023) focused on the importance of information availability on websites. The respondents of this study were 3,544 do-it-yourself (DIY) online shoppers from the United Kingdom (UK). A scenario-based experiment was conducted in which a few criteria were tested in the study, and the effect of each criterion on consumers’ pattern shopping behavior was investigated. Findings show that product information on websites plays a major role in the consumer buying process. Lack of information is associated with service failures. Insufficient or misleading information will have negative effects on consumer shopping behavior.

Gulfraz et al. (2022) analyzed the factor of functional and psychological dimensions that influence online impulsive buying within e-commerce platforms. 1489 customers of two leading Chinese e-commerce platforms: Jindong and Taobao, were the respondents and answered the questionnaire through an online survey website. The study found that if the e-commerce platform provides satisfactory information in an easily accessible

manner, then consumer purchasing decisions can be made. Thus, a good image is developed and a long-term relationship is built between the customers and the platforms.

Novialeta and Slamet (2021) investigated the relationship between information availability and online shopping behavior. The type of research was descriptive using quantitative data. The data were collected from 200 respondents who use online shopping, from Batam, Indonesia, using convenience sampling. The result showed that information availability had a negative relationship with online shopping behavior among online shoppers from Batam. Thus, the availability of the information supplied by online sellers does not influence consumers to buy online.

Table 1: Summary of Literature of Information Availability on Online Shopping Behavior

Author (s) & Year	Dependent Variable	Independent Variable	Finding
Al Hamli & Sobaih (2023)	Online shopping	Information availability	Product information is associated with online shopping
Gulfraz et al. (2022)	Online shopping	Information availability	Availability of information influences consumers' buying behavior
Novialeta and Slamet (2021)	Online shopping	Information availability	Information availability has a negative relationship with online shopping behavior.

Relationship between social influence and online shopping behavior

The impact of trust, perceived reliability, social influence, and peer recommendation are factors that influence buying behavior towards online shopping in a study by Vaibhav et al. (2024). Purposive sampling methods were used in collecting the data from five districts of Haryana, namely Rohtak, Jind, Hisar, Mahendragarh, and Gurgaon. This study found that social influence has a significant positive relationship with buying decisions. This means that external factors like social networks, media and opinions from peers influence consumers in making online purchase decisions.

Furthermore, Gusti et al. (2023) examined how social media such as live streaming, promotional tools, online reviews and celebrity endorsement impact online shopping behaviors. Thus, 543 Gen Z consumers in Indonesia who are familiar with social media and online shopping were chosen as respondents of this study. This study used purposive sampling and Structure Equation Modeling (SEM) was applied to assess the data. The result shows that customers' online review has a significant positive influence on online shopping behavior. It is indicated that potential customers tend to gain more confidence in making the purchase decision when a product receives higher reviews.

Davis et al. (2021) investigated the relationship between social influence and online purchasing behavior. The information was gathered from 556 respondents in Hyderabad, Chennai, and Bangalore. The result showed that social influence had a positive relationship with online shopping behavior in Hyderabad, Chennai, and Bangalore. Moreover, the researchers posit that people tend to interact through social groups, which motivates others to shop online.

Table 2: Summary of Literature of Social Influence on Online Shopping Behavior.

Author (s) & Year	Dependent Variable	Independent Variable	Finding
Vaibhav et al. (2024)	Online shopping	Social influence	Social influence is associated with consumers' purchase decisions
Gusti et al. (2023)	Online shopping	Social influence	Reviewing social media influences consumers' purchase behavior
Davis et al. (2021)	Online shopping	Social influence	Interaction among people in social groups influences consumers to shop online.

Relationship between trust and online shopping behavior

Al Hamli & Sobaih (2023) investigated the factors of product variety, convenience, payment method, trust, and psychological affecting online shopping amid COVID-19 in Saudi Arabia. 220 online shoppers were respondents who fulfilled a set of questionnaires in this study. The finding reveals that trust has no significant positive relationship and has a low correlation with consumers' decisions in e-commerce shopping. Sharing sensitive information such as credit cards and buyers' data may lead to fraud, which should be disclosed. Nowadays by using highly sophisticated technology, it is easier for hackers and cybercriminals to hack consumers' data, posing threats in the modern digital world.

Sima and Hayani (2021) identified the relationship between trust and consumers' buying behavior in online shopping in Malaysia. Social media networks such as WhatsApp, Facebook, Telegram, and Instagram were the platforms used to distribute the questionnaires randomly to the 335 respondents. The result showed that trust had a positive relationship with consumers' buying behavior during the COVID-19 pandemic in Malaysia. Additionally, the researchers reveal that a person who trusts an online shopping platform is more likely to shop online than a person who has doubts.

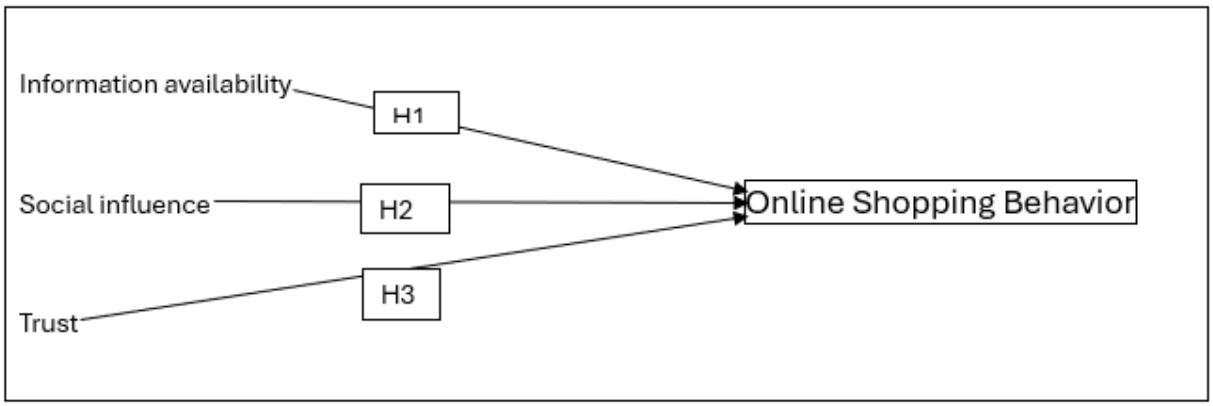
Ru et al. (2021) studied the relationship between trust and online shopping behavior on e-commerce exchanges during the COVID-19 pandemic. The data were collected from 203 participants, including students, housewives, and freelance businessmen from Da Nang, Vietnam using a convenience sampling technique. According to the study, during the COVID-19 pandemic, e-commerce exchanges were influenced by trust. Customers expect better service and security from e-commerce platforms. Many people are afraid to shop online because e-commerce platforms do not adequately protect their privacy, trust, and confidence. Due to this, protecting consumers' privacy and security is always a necessity.

Table 3: Summary of Literature of Trust on Online Shopping Behavior.

Author (s) & Year	Dependent Variable	Independent Variable	Finding
Al Hamli & Sobaih (2023)	Online shopping	Trust	Trust has no significant positive relationship and has a low correlation with consumers' decisions in e-commerce shopping.
Sima and Hayani (2021)	Online shopping	Trust	Trust in online shopping platforms makes a person more likely to shop online compared to a person with doubts.
Tan et al. (2021)	Online shopping	Trust	Trust influences consumers to shop online

From the studies above, the following framework was formed.

Figure 1: Conceptual Framework



H1: Information availability has a significant relationship with customer's online shopping behavior.
H2: Social influence has a significant relationship with customer's online shopping behavior.
H3: Trust has a significant relationship with customer's online shopping behavior.

3. Methodology

Population and Sampling Technique

Consumers in Malaysia who make online purchases were selected as the population of this study. Hulland et al. (2017), recommended using convenience sampling as this is a marketing-based study and the target population is often unknown. Hence, a set of questionnaires was distributed randomly to 297 consumers via email, WhatsApp messenger and telegram. Moreover, in analyzing the data, Statistical Package for the Social Science Software (SPSS) version 26.0 was used for that purpose.

Instrument

The questionnaire was divided into three (3) sections. Section A focused on the demographic information and the nature of the research. Section B included the questions related to independent variables: information availability, social influence, and trust. Section C consisted of the online shopping behavior (dependent variable). Both Section B and C used a 5-point Likert Scale, ranging from 1 for "Strongly Disagree" to 5 for "Strongly Agree".

4. Finding and Analysis

Reliability Test

The reliability test is figured by corresponding the score of every scale thing with the aggregate score for every perception (normally singular review respondents), contrasting that with the difference for all individual thing scores (Goforth, 2015). The rule of thumb states that the acceptable reliability is 0.7 and above (Tavakol and Dennick, 2011). A Cronbach's alpha is a reliability coefficient that indicates how well the items are.
In a set are positively related to one another.

Table 4: Result of Reliability Analysis (n=297)

Variables	Number of items	Cronbach's Alpha
Information Availability	5	0.861
Social Influence	5	0.870
Trust	4	0.849
Online shopping behavior	4	0.790

Table 4 shows the values of Cronbach's alpha for dependent variables and independent variables. The results were greater than 0.60 which ranges from 0.790– 0.870, contributing that all variables are both reliable and consistent (Taherdoost, 2016). Social influence obtained the greatest Cronbach's alpha value at 0.870, followed by information availability at 0.861. The third one was trust with Cronbach's alpha value at 0.849 and the lowest Cronbach's alpha, 0.790 was online shopping behavior.

Pearson Correlation Analysis

Pearson Correlation was used to identify the possible relationship between the variables and analyze the strength of the relationship between the two variables.

Table 5: Summary of Pearson Correlation (n=297)

		1	2	3	4	5	6
Mean_Information Availability	Pearson Correlation	1					
	Sig. (2-tailed)						
Mean_Social Influence	Pearson Correlation	.481**	1				
	Sig. (2-tailed)	.000					
Mean_Trust	Pearson Correlation	.571**	.522**	1			
	Sig. (2-tailed)	.000	.000				
Mean_Online Shopping Behavior	Pearson Correlation	.498**	.440**	.469**	1		

Sig. (2-tailed)	.000	.000	.000

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

Table 5 demonstrates the relationship between independent variables (information availability, social influence, trust) and dependent variables (online shopping behavior). Based on the table above, shows a moderate association between three independent variables and online shopping behavior: information availability (r=0. 498), social influence (r=0.440) and trust (r=0.469). These correlations were significant with a p-value of 0.01 significance level.

Multiple Regression Analysis

By performing the regression analysis, the researcher can find out the most significant dimension that influences the dependent variable.

Table 6: Summary of R-square (n=297)

Summary		**Anova**	
R	R^2	F	Sig.
0.570[a]	0.325	47.001	.000[b]

Dependent Variable. Online Shopping Behavior

According to Table 6, the value of R^2 for online shopping behavior as the dependent variable is 0.325. Therefore, it can be concluded that the variance of online shopping behavior is explained by information availability, social influence, and trust for 32.5 percent of the variance, while the remaining 0.675 (67.5 percent) is explained by other variables that were not included in this study.

Table 7: Summary of Coefficient (n=297)

	Unstandardized Coefficients		**Standardized Coefficients**		
Dimensions	ß	S. E	ßeta	t	p-value
Information Availability	0.351	0.074	0.289	4.768	.000
Social Influence	0.156	0.046	0.196	3.367	.001
Trust	0.186	0.057	0.202	3.239	.001

Dependent Variable. Online Shopping Behavior

Based on the p-value from Table 7, information availability influenced online shopping behavior with a value (0.000) less than (0.01), social influence influenced online shopping behavior with a value (0.001) less than (0.01) and trust influenced online shopping behavior with the value (0.001) less than (0.01) Thus, H1, H2, H3 are supported.

Meanwhile, the beta value showed a correlation coefficient that ranged from 0 to 1 or 0 to -1. The closer the value is to 1 or -1, the stronger the relationship. Therefore, based on the β value, information availability became a substantial contributor to online shopping behavior at β = 0.289. As a result, information availability was proven as the most dominant component influencing shopping behavior compared to the other independent variables.

Table 8: Summary of Hypothesis Testing

Research Objectives	Hypothesis Statement/ Research question	Decision
To study the factors influencing online shopping behavior among Malaysian consumers.	H1: There is a significant positive relationship between information availability and online shopping behavior.	Supported
	H2: There is a significant positive relationship between social influence and online shopping behavior.	Supported
	H3: There is a significant positive relationship between trust and online shopping behavior.	Supported

To identify the most important factor that influences online shopping behavior among Malaysian consumers.	What is the factor that most influences online shopping behavior among Malaysian consumers?	Information Availability

5. Discussion and Conclusion

The researcher summarized that all the research objectives and questions had been met based on the data and findings. The result was identified by the researcher based on the results of various tests. Based on multiple regression analysis, hypotheses 1, 2, and 3 are supported.

Research Objective 1: To study the factors influencing online shopping behavior among Malaysian consumers.

The result of the Correlation Coefficient analysis revealed a moderate association between three independent variables and the dependent variable: information availability (r=0. 498), social influence (r=0.440) and trust (r=0.469). It was based on the rule of thumb which states that a coefficient ranging between +_ 0.41 to +_0.70 shows a moderate correlation.

The result shows that H1 is supported; information availability has a positive relationship with online shopping behavior. Thus, the finding of this study is in line with the result by Shazadi, (2023). This researcher stated that the availability of information in an online store eliminates the need for physical contact, but it also significantly impacts customers when relevant information is provided. When customers have access to all the necessary product information, including visuals and other details, they are more likely to choose the online store for their purchases. Providing consistent products is crucial for customer satisfaction and loyalty. The outcome of this study is also in line with Manandhar and Timilsina (2023) who discovered a positive relationship between information availability and student customer behavior in online shopping in Kathmandu. This finding aligns closely with Mustafa et al. (2011) research, which identified information quality as a key factor influencing customer behavior in online shopping. Similarly, the results are consistent with Guo et al. (2012) earlier study, which emphasized the significance of information quality in determining customer behavior in online shopping.

Moreover, the result shows that H2 is supported; social influence has a positive relationship with online shopping behavior. The finding of this study is also parallel with the result of a previous study (Kusmaharani and Halim, 2020), particularly in social influence factor. These researchers agree that social influence had a significant relationship with online shopping behavior where social influence encouraged online shopping behavior on Indonesian indie cosmetic products.

Furthermore, the result shows that H3 is supported; trust has a positive relationship with online shopping behavior. The finding of this study also aligns with the result by Sima and Hayani (2021) mainly in the factor of trust. These researchers agree that trust is associated with online shopping behavior which reveals that a person who trusts an online shopping platform is more likely to shop online compared to a person who has doubts.

Research Objective 2: To identify the most factor that influences online shopping behavior among Malaysian consumers.

The findings showed that information availability was the dominant factor in this study. The strength of the relationship is defined by the closer the value is to 1 or -1, which means the stronger the relationship. Through multiple regression analysis, information availability showed the greatest Beta (β) value of 0.289 compared to other variables.

The findings of this study align with previous research by Tzeng et al. (2020), indicating that information availability significantly influences shoppers' pre-purchase information search behavior in e-retail. Dissatisfaction arises if the information posted on websites is unattractive thus customers leave without making any purchases (Cyr, 2008). On the other hand, attractive and informative websites encourage customers

to buy continuously and increase their satisfaction (Sabiote et al., 2012; Szymanski & Hise, 2000; Tzeng et al., 2020). Park and Kim (2003) identified product information quality as a key factor directly impacting user satisfaction, while also fostering consumer loyalty. Wang et al. (2009) demonstrated that information quality and perceived value in online communities significantly affected customer trust, with information quality directly influencing consumer loyalty. Al-Tit (2020) emphasized the importance of accurate and relevant information quality in developing consumer loyalty within an online store's quality dimension.

In conclusion, this study highlights the importance of providing information for frequently purchased items to potential customers, enabling easy comparison and informed decision-making. Malaysians, like many consumers, prioritize information when making purchases, seeking the best price and advantages. Thus, e-commerce businesses should focus on communicating value through information provision, ensuring the quality of product information, and evaluating its impact on sales. Online shops with high-quality information availability benefit from increased comparison opportunities afforded by the Internet, making information availability a key marketing indicator that influences purchasing decisions.

This study also helps in understanding the factors that influence online shopping behavior among Malaysian consumers which consists of information availability, social influence, and trust. After all, it shows that the factor of information availability is the most significant in influencing online shopping behavior among Malaysian consumers.

Recommendations

This study examined the factors influencing online shopping behavior among Malaysian consumers (information availability, social influence, and trust). The researcher believes that future studies can be conducted to identify other variables that can influence behavior in online shopping. It also suggests expanding the scope of the study by comparing online purchasing behavior among generations X, Y, and Z including ethnicity or cultural components, as this study's findings need to be more generalizable and not only limited to Malaysia.

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