**About**

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WORKING PAPER SERIES 2025

CoBAMS

Working Paper Series 2025

Edited by:

Professor James Wokadala
Patricia Ndugga, Ph.D.

Design and layout by: Elvis Lubanga

FOREWORD

Professor
Edward Bbaale

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Gratitude is due to the lead authors for drafting the manuscripts that embody innovative ideas and new knowledge that informs policy discourse and decision making.

Guided by its vision and its mission to provide innovative and industry-aligned teaching, learning, and research responsive to dynamic national and global needs, Makerere University is committed to fostering academic excellence while aspiring to be research led, and producing graduates equipped for life, work and citizenship. Thus, the University makes a direct contribution to strengthening the foundation for the country's human capital and bridging the knowledge and skills gaps, including those with direct relevance to agro-industrialisation, natural resource management, manufacturing, digital transformation, governance, and security.

In line with the overall University strategic objectives, CoBAMS introduced college level research agenda with a modest research grant as a flagship activity in 2024. The college research plan is well aligned to the University wide research agenda especially of creating an enabling and harmonious environment for research and innovation, while cultivating strategic partnerships to enhance our research capabilities.

Our research outputs are also well aligned to the sustainable development agenda 2030 particularly in aspects of ending poverty, education and skills development, good health for all, climate change, ensuring prosperity in growth and business, and promoting peace and partnerships for all. These research outputs are indeed interconnected, recognising that progress in one area affects others, and they strive to balance social, economic, and environmental sustainability, leaving no one behind.

The College remains committed to supporting quality research that contributes to knowledge creation, policy discourse, and societal impact that stimulate policy debate and also foster knowledge and skills acquisitions among the researchers.

Gratitude is due to the lead authors for drafting the manuscripts that embody innovative ideas and new knowledge that informs policy discourse and decision making.

We encourage the researchers to take the next important step of publishing their manuscripts in reputable peer-reviewed journals. Such progression strengthens both individual academic portfolio and the reputation of CoBAMS and Makerere University at large.

Professor Edward Bbaale
Principal,
College of Business and Management Sciences
CoBAMS

Professor
James Wokadala

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SDG 1
No Poverty

SDG 1 aims at ending poverty in all its forms everywhere by focusing on multi-dimensional poverty, not just income, and ensuring access to basic services, economic resources, and social protection for vulnerable populations. Key aspects include eradicating extreme poverty, reducing overall poverty, building resilience to disasters, and implementing inclusive policies and adequate social protection systems for the poor and vulnerable population.

This section presents the following papers that align to this goal:

1. **"Decomposition of Income Sources and their Contribution to Income Inequality in Uganda."** *Susan Namirembe Kavuma, Steven Katende and Richard Sebaggala*

2. **"Impact of Uganda's Emyooga Micro-Finance Programme on Small-Enterprise Performance: A Mixed-Methods Study."** *Serunjogi Ambrose*

Decomposition of Income Sources and their Contribution to Income Inequality in Uganda

Susan Namirembe Kavuma, *Steven Katende, and Richard Sebaggala*

Introduction

Globally, there is renewed interest in the linkage between income inequality and economic growth because of the increasing levels of inequality within countries and its related disparities. The World Inequality report (2022) notes that in all regions except Europe, the share of the bottom 50% in total earnings is less than 15% and less than 10% in the more unequal societies of Latin America, Sub-Saharan Africa and MENA region. Additionally, income inequality is a critical socio-economic challenge in many developing countries. Uganda is no exception. With a Gini coefficient of 0.41 (UBOS, 2020), Uganda ranks third highest in levels of inequality in East Africa, behind South Sudan and Rwanda. Despite significant economic growth and poverty reduction over the past few decades, Uganda continues to experience persistent and, in some regions, growing income disparities. These inequalities are not only a threat to social cohesion but also a barrier to inclusive and sustainable development. Understanding the underlying factors driving household income inequality is essential to designing effective policies to reduce inequality and promote equitable growth.

This study aims to analyse the structure and sources of household income inequality in Uganda using decomposition techniques. By examining how different income sources contribute to overall inequality, the study seeks to provide insights into the dynamics of income distribution and highlight potential areas for policy intervention. The results of this analysis are crucial for informing strategies that promote inclusive growth, reduce poverty, and mitigate the socio-economic disparities that continue to shape Uganda's economic landscape.

Methods

To assess income inequality and the contribution of different income sources to overall inequality, the study employed the Gini decomposition by income sources methodology, as proposed by Lerman & Yitzhaki (1985). The decomposition framework allows for the estimation of the contribution of each income source to overall inequality using the Gini index, its correlation with total income, the income elasticity of inequality and social welfare impacts referencing on the works of Amartya Sen (1970).

Findings

All income sources exhibited negative redistribution effects, indicating that tax, labour, and social protection policies can help offset inequality. Of particular importance is the finding that business and wage incomes also have the highest redistributive potential. This suggests that targeted reforms such as progressive taxation and improved labour regulations can significantly reduce inequality for those reliant on these sources. Similarly, improving access to agricultural subsidies and land for rural and female-headed households could enhance the equalising role of agriculture.

Gender disparities in income are both substantial and persistent. The largest gender income gap was observed among business earners (47.3% in 2019/20), followed by agriculture (45.2%) and wages (44.1%). The widening gender gap in wage income highlights structural issues such as occupational segregation and differences in human capital accumulation. While business income has become a growing source of earnings for women, it also emerged as a stronger contributor to inequality among female-headed households in 2019/20. These trends call for gender-responsive economic policies that address the barriers women face in accessing high-return economic activities.

The rural-urban divide also reflects stark differences in income structure and inequality. In rural areas, agriculture remains the dominant income source but is becoming less equalising over time, as evidenced by rising Gini correlations. In contrast, urban inequality is primarily driven by wage and business incomes, both of which became more concentrated among higher earners over the study period. The redistributive effects of current transfers and agriculture were more pronounced in rural areas, whereas wage and business redistribution policies were more impactful in urban settings.

Conclusion

Income inequality in Uganda is structurally driven by disparities in wage and business incomes, compounded by gender and regional inequalities. Tackling these issues requires a comprehensive and targeted policy approach. Key policy recommendations include: i) reforming tax systems and subsidies to more effectively redistribute income from business and wage earners, ii) strengthening social protection programs, particularly current transfers targeting rural and female-headed households, iii) investing in equitable access to education, vocational training, and credit, especially for women and rural entrepreneurs, iv) promoting inclusive agricultural growth through land reforms, input subsidies, and rural infrastructure and v) enforcing labour market reforms that promote wage equity and reduce occupational segregation. Ultimately, fostering inclusive growth in Uganda requires not only expanding economic opportunities but also ensuring that the benefits of growth are broadly and fairly shared. Fiscal and labour policies must be leveraged to balance growth with equity and advance social welfare.

Impact of Uganda's Emyooga Micro-Finance Programme on Small-Enterprise Performance: A Mixed-Methods Study

Serunjogi Ambrose

Introduction

In Uganda access to finance is a critical barrier for Micro and Small Enterprises (MSEs), stalling their growth and contribution to the economy. In light of the above, the Government of Uganda launched the Emyooga programme in 2020, a large-scale, state-led microfinance initiative delivered through Savings and Credit Cooperative Organisations (SACCOs) based on constituencies in the country. In spite of the fact that it was rolled out nationally and had substantial public investment, thorough evidence on its impact was scarce. The goal of this paper is to assess the effects of the programmes on business performance, family welfare, and the processes through which these effects were achieved.

Methods

The evaluation employed a rigorous mixed-method design to capture the effect of the programme on the performance of small businesses. Quantitative analysis made use of the roll-out of Emyooga under stepped-wedge cluster Randomised Control Trial (RCT) design. 2,400 microenterprises in 20 districts were traced from 2019 to 2023. The primary analytical strategy employed was a Difference-in-Differences (DiD) estimation assisted by a Regression Discontinuity (RD) design employing SACCO membership eligibility cutoffs. Placebo tests and alternative model specifications were used to establish robustness. Qualitative element involved 24 Focus Group Discussions and 48 Key Informant Interviews across eight purposively selected districts, resulting in rich context data regarding implementation dynamics, loan usage, and SACCO governance.

Findings

The analysis reveals that the Emyooga programme had a positive and statistically significant impact on several key enterprise-level outcomes:

- Business Income: Treated enterprises experienced an average increase in monthly income of UGX 22,800, representing a 10-15% gain relative to the control group ($p < 0.01$).

- Business Survival: Through this programme business survival rates improved by 5.9 percentage points (81.5% vs. 75.6% in the control group), a marginally significant effect ($p=0.07$) that suggests a crucial stabilisa-

tion role, particularly during the economic disruptions of the COVID-19 pandemic.

- Asset Accumulation: The value of productive assets held by treated businesses increased by an average of 20%.

- Household Welfare: While household consumption and total income showed insignificant increases, savings behaviour improved markedly, with treated households saving UGX 30,000 more on average, primarily within their SACCOs.

Conclusion

This research confirms that a government-sponsored, SACCO-anchored microfinance model can significantly enhance the operational performance of small enterprises in Uganda. Emyooga has demonstrably led to increased revenues, improved survival rates, and greater asset accumulation, particularly benefiting female entrepreneurs. Nonetheless, issues related to governance and a lack of uniformity in impact impede its effectiveness. For sustained success and greater outreach, the program requires the integration of non-financial services, better institutional management for SACCOs, and dedicated support for marginalised business owners. These outcomes provide crucial insights for refining Emyooga and informing subsequent governmental development schemes such as the Parish Development Model.

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Heterogeneity and Mechanisms

The benefits of the program were not evenly spread across all participants. Heterogeneity analysis showed that female entrepreneurs benefited significantly more, experiencing a 15% rise in income compared to just 5% for their male counterparts. Additionally, those who started with greater business capacity reaped much larger gains—evidence of a "Matthew effect," wherein individuals already better equipped to leverage capital derived the greatest advantages. Qualitative insights highlighted two main drivers of success: the effective use of loans to invest in inventory and equipment, and the social support coupled with peer accountability fostered by well-run SACCOs. On the other hand, poor SACCO governance and the misuse of funds emerged as the key obstacles limiting the program's overall impact.

Policy Implications and Cost-Benefit

The study proposes targeted policy recommendations, including strengthening SACCO governance, integrating financial literacy and business training into the loan process, and designing adaptive repayment structures for economic shocks. An exploratory cost-benefit analysis suggests that the economic returns of Emyooga likely outweigh its costs, with a estimated Benefit-Cost Ratio of approximately 2 under conservative assumptions. However, this result is sensitive to the sustainability of income gains and the revolving fund's integrity.

Conclusion

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SDG 2
Zero Hunger

SDG 2 aims to end hunger, achieve food security, improve nutrition, and promote sustainable agriculture worldwide by 2030. This involves ensuring access to safe, nutritious, and sufficient food for all people, which relies on promoting sustainable production systems, investing in rural infrastructure and agricultural research, and rethinking how food is grown, shared, and consumed. The goal is to eradicate hunger in all its forms, ensuring no one goes without food as well as achieving food security. This means ensuring that all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life. The goal further addresses aspects of malnutrition by focusing on access to healthy diets, including fresh produce, dairy, and meat. This generally entails supporting small-scale farmers, investing in agricultural research and development, promoting sustainable food production systems, and protecting the environment through farming.

This section presents the following paper that aligns with SDG 2:

1. **"A Theoretical Approach to Buyer-Supplier Relationship Commitment: A case of Food Processing Firms in Uganda."** *Christopher Alioni*

A Theoretical Approach to Buyer-Supplier Relationship Commitment: A Case of Food Processing Firms in Uganda

Christopher Alioni

Introduction

Having sound relationships between suppliers and buyers is a pre-requisite to achieving continuity and success in the manufacturing sector. This causes both buyers and suppliers to strive to commit themselves to these useful relationships. Relationship commitment is an attitude of supply chain partners about the development and maintenance of a stable, long-lasting mutual relationship. When parties are committed to a business relationship, they are most likely to achieve numerous benefits which include inter alia: risk management, supply chain resilience, flexibility, low-cost production. However, numerous research studies worldwide indicate that buyer-supplier relationships have continuously been hindered by less commitment than is desired from one party or both. Evidence shows that transaction costs in developing, maintaining the buyer-supplier relationship is one of the main barriers towards achieving the parties' commitment. When the cost of transacting business is high, the buyers and suppliers will be discouraged to continue with the relationship since switching between parties will align with the cost structure of either party.

Research Questions

i. What is the effect of transaction costs on relationship benefit?

ii. What is the relationship between transaction costs and buyer-supplier relationship commitment?

iii. What is the relationship between dynamic capabilities and relationship benefit?

iv. What is the relationship between trust and relationship benefit?

v. What is the relationship between trust and buyer-supplier relationship commitment?

vi. What is the relationship between relationship benefit and buyer-supplier relationship commitment?

Methods

This study uses a cross-sectional research design based on the quantitative approach focusing on descriptive and inferential statistics. To arrive at the study population, we started by identifying the food processing firms in Kampala, Uganda which add up to 1,446. Using the guidelines of Krejcie & Morgan (1970) in determining the sample size, the researcher stratified and then randomly selected a sample of 300 food processing firms together with their dominant supplier firms. The unit of analysis was a dyad of the trading relationship while the unit of inquiry was the purchasing managers and sales manager in the food processing firms (buyers) and supplier firms respectively.

The sampling frame was obtained from the offices of Uganda Bureau of statistics (UBOS). Of the 600 questionnaires (300 buyer firms and 300 suppliers) that were sent out, only 460 (230 each) were fully filled and usable representing 76.6% response rate.

Findings

The findings of the study suggest that trust, dynamic capabilities and relationship benefit positively affect buyer-supplier relationship commitment whereas transaction costs have a negative effect on buyer-supplier relationship commitment. Findings further reveal that dynamic capabilities, relationship benefit and transaction costs significantly predict buyer-supplier relationship commitment. Surprisingly, trust is found to be a non-significant predictor of relationship commitment.

Conclusion

We established the importance of transaction cost theory, dynamic capabilities theory and commitment-trust theory as complementary in understanding the concept of buyer-supplier relationship commitment. The concepts drawn from these theories, that is, dynamic capabilities, transaction cost, relationship benefit and trust were used to establish their relationship with buyer-supplier relationship. We therefore conclude that developed and/or improved dynamic capabilities, trust and relationship benefit increases on buyer-supplier relationship commitment whereas transaction costs lead to the absence of it.

SDG 3
Good Health and Well-being

SDG 3 aims at ensuring healthy lives and promoting the well-being of all people at all ages by achieving universal health coverage and ending epidemics, while also reducing non-communicable diseases and improving maternal and child health. Some of the key components of the goal are i) building resilient, accessible, and inclusive health systems worldwide; ii) ending preventable deaths of newborns, infants, and children under five, and improving reproductive health; iii) ending epidemics of major communicable diseases, including HIV/AIDS, tuberculosis, malaria, and neglected tropical diseases; iv) reducing premature mortality from Non-communicable Diseases (NCDs) like diabetes and heart disease; v) addressing mental health disorders and promoting overall well-being for all ages; and vi) striving for everyone to have access to quality health-care services and medicines without financial hardship.

The following papers, presented in this section, align with this SDG:

1. **Early Reproductive Life Course Transitions and Their Impact on Later Life Maternal Reproductive Choices: A Case of Contraceptive Use Behaviour in Uganda.** *Christabellah Namugenyi, Claire Ashaba, Douglas Andabati Candia, John A Mushomi , John Bosco Asiimwe, Benard Odur, Zabibu Afazali, Peter Kisaakye and Shaheen Memon*

2. **Differential Effects of Women's Education and Contraceptive use on High-Risk Fertility in Uganda.** *Faisal Buyinza*

Early Reproductive Life Course Transitions and Their Impact on Later Life Maternal Reproductive Choices: A Case of Contraceptive Use Behaviour in Uganda

Christabellah Namugenyi, *Claire Ashaba, Douglas Andabati Candia, John A Mushomi , John Bosco Asiimwe, Benard Odur, Zabibu Afazali, Peter Kisaakye and Shaheen Memon*

Introduction

Contraceptive use is fundamental to reproductive health, empowering individuals to manage fertility, prevent unintended pregnancies and improve maternal and child outcomes. In Uganda, early life transitions i.e. sexual debut, first birth, and marriage, occur at relatively young ages and shape reproductive behaviour. Marriage introduces cultural and familial expectations for childbearing while sexual activity outside marriage still carries the risk of pregnancy. Despite interventions like youth-friendly family planning and gaming-based strategies, teenage pregnancies persist at around 25 and early marriage accelerates childbearing.

The study aims to investigate whether four sequences of early reproductive life events; Marriage-Sex-Birth (MSB), Sex-Marriage-Birth (SMB), Sex-Birth-Marriage (SBM), and Sex-Birth-no Marriage (SBnoM) influence later-life modern contraceptive use among Ugandan women across different birth cohorts. It examines the timing and sequencing of reproductive events, assesses modern contraceptive use across birth cohorts and examines the relationship between event sequencing and contraceptive use across the birth cohorts.

Methods

The study utilises the 2016 Uganda Demographic and Health Survey (UDHS) data on 13,284 parous women aged 15–49. The outcome was current use of modern contraceptives, while traditional method users were excluded. Birth cohorts were categorised as Cohort 1 (1991–2000, 15–24 years), Cohort 2 (1981–1990, 25–34 years), and Cohort 3 (1966–1980, 34–49 years). The main explanatory variable is the sequence of first sex, first birth, and first marriage, classified as MSB, SMB, SBM, and SBnoM. Confounders included religion, residence, education, wealth index, region, employment, sex of household head, children ever born, marital status, and pregnancy termination history.

Analysis involved descriptive statistics, Pearson chi-square tests for bivariate associations, and multivariable binary logistic regression to assess the relationship between early life sequences and contraceptive use within each cohort, using STATA 17.0 and a 5% significance level.

Findings

Descriptive analysis indicates that 34% of women used modern contraception with higher uptake in Cohort 2 (38%). The majority followed the MSB sequence (43%), with first births occurring post-marriage (78%). Median ages at first sex, first birth, and first marriage were 16, 18, and 18 years, respectively.

Bivariate analyses showed significant associations between sequences and contraceptive use in Cohort 1 ($p<0.05$), but not in older cohorts. Occupation and pregnancy termination were significant for Cohort 2. Other variables such as education, wealth, region, religion, marital status, and children ever born were significantly associated across cohorts.

Multivariable analysis revealed that in younger women (Cohort 1), marriage-related sequences (MSB and SBM) were associated with higher contraceptive use (aOR=1.54 and 1.52, respectively). In older women (Cohort 3), marriage-related sequences were associated with non-use of contraception (aOR range 0.47–0.52). In middle-aged women (Cohort 2), however, early life sequences were not significant, but pregnancy termination predicted lower contraceptive use (aOR=0.82). Across cohorts, higher education, wealth, employment, being married, and having more children increased contraceptive likelihood, while regional and religious factors, widowhood, and female-headed households decreased it.

Conclusion

Early reproductive life transitions remain consistent across cohorts, reflecting enduring cultural norms around marriage and sex in Uganda. However, contraceptive use outcomes vary by age and cohort: younger women adopting early marriage sequences are more likely to use contraception, older women show lower adoption, and middle-aged women's behaviour is influenced by pregnancy termination history. Tailored, cohort-sensitive reproductive health interventions are essential to optimise contraceptive uptake, reduce high fertility, and improve maternal and child health outcomes in Uganda.

Differential Effects of Women's Education and Contraceptive use on High-Risk Fertility in Uganda

Faisal Buyinza

Introduction

We investigate the differential impact of women's education and contraceptive use on high-risk fertility in Uganda using the Uganda Demographic Health Survey data and employ instrumental probit techniques. The technique uses the individual instruments by taking 'average children born' at the sub-county level, other than the subcounty of the   woman in the country' as an instrument for the woman's number of children born.

Findings

The findings indicate that women's educational attainment and use of contraceptives are associated with low-risk fertility. Also, the results show that women's employment status, child breastfeeding, delivering in hospital, using Tv and radio and residing in urban areas are associated with low-risk fertility outcomes. On the other hand, the husband's child preference and the gender of the child are related to high-risk fertility outcomes. Our results provide evidence for designing supportive policies for reducing high-risk fertility among women, especially among rural households where there are disproportionately lower education outcomes, low employment opportunities for women, and limited use of contraceptives. Therefore, government should ensure that all women have access to contraception to avoid unintended pregnancies; to provide all pregnant women with skilled and respectful care in a safe environment during delivery. Also, efforts should be made to ensure women with complications have timely access to quality emergency obstetric care. In addition, there is need for measures aimed at increasing access to contraceptives, improving comprehensive sexuality education, and protecting women's right to decide whether, when and with whom to have children, with unsafe abortion being among the leading causes of maternal mortality.

Conclusion

Thus, policies to eliminate all barriers to female education and access to contraceptives can greatly enhance low-risk fertility outcomes in Uganda. Specifically, it's important that policy makers need to improve the partner's awareness of the dangers of high fertility on women's lives and at the same time improve women's socio-economic status to enable them participate in the

socioeconomic development activities at all levels in the country.

Determinants of Family Size in Uganda

Niringiye Aggrey

Introduction

This study investigates the socio-economic, demographic, and spatial determinants of household size in Uganda using data from the 2024 Uganda National Population and Housing Census. This study aims to bridge the empirical and methodological gap by leveraging the most recent data from the Uganda Bureau of Statistics (UBOS). Unlike previous studies that emphasise fertility behaviour or reproductive intentions, this research focuses on the realised outcome, household size and examines how it is shaped by a range of interrelated factors, including education, gender, occupation, household wealth, and regional disparities.

Findings

Employing a multivariate regression framework, the analysis reveals significant correlations between household size and variables such as region, education level of the household head, marital status, and asset-based income proxy. Rural households, male-headed households, and those in Northern Uganda exhibit larger household sizes, while higher education attainment is associated with smaller household units. The findings underscore the importance of region-specific and gender-responsive planning in designing effective population and development policies. The study provides updated empirical evidence to guide Uganda's socio-economic planning, particularly in addressing household welfare, service provision, and fertility transition dynamics.

Conclusion

The results consistently highlight the importance of access to health services, education, and reproductive decision-making in shaping family structures across Uganda. The results make a dual contribution to demographic literature and policy discourse. On the research front, it expands existing knowledge by employing both multiple linear and logistic regression models to uncover complex drivers of household size using robust, nationally representative data. The study's analytical framework, informed by Demographic Transition and Human Capital theories, provides a theoretical lens through which future studies on fertility behaviour can be assessed. From a policy perspective, the findings offer actionable insights for designing targeted interventions in education, family planning, and healthcare, tailored to rural-urban dynamics and regional disparities.

Exploring the Organisational Factors that Drive Talent Attraction in the Health Sector

Jamidah Nakato

Introduction

This paper explores the concept of talent attraction, particularly within the healthcare sector. It defines talent attraction as an organisation's ability to appeal to and recruit high-potential individuals with the right skills, values and attitudes. Previous studies highlight factors such as employer branding, psychological contracts, person-organisation fit and employee value propositions as key drivers of talent attraction. Scholars also emphasise the importance of reward systems, organisational reputation and work conditions in influencing the decisions of professionals on whether to join or remain in an organisation. In the healthcare context, factors like community affiliation, geographical location, leadership structures and infrastructure are shown to affect talent attraction, especially in rural and remote areas. The literature also underscores the role of organisational support, job security and social environments in shaping employee perceptions and decisions. Despite these insights, there remains a gap in understanding how these organisational factors specifically influence talent attraction in Uganda's public healthcare institutions.

Uganda's healthcare sector faces a critical shortage of skilled professionals, with an estimated 30% deficit in the workforce. This shortfall compromises service delivery, especially in rural areas, and contributes to increased health inequalities. Many healthcare workers leave public institutions in search of better opportunities, driven by poor working conditions, inadequate rewards and lack of organisational support. The policy problem centres on the urgent need to identify and address the organisational factors that hinder talent attraction in public healthcare institutions, which is essential for improving healthcare outcomes and national development.

Objectives

i.   To establish the relationship between talent pool and talent attraction?

ii. To investigate the relationship between organisational support and talent attraction?

iii. To analyse the relationship between reward system and talent attraction?

iv. To assess the relationship between work conditions and talent attraction?

v.   To establish the relationship between social and work environment and talent attraction?

Methods

The study employed a quantitative research methodology using a descriptive survey design, to answer the objectives derived from literature. Data was collected through a self-administered questionnaire distributed to a stratified random sample of 910 healthcare employees across various public institutions in Uganda's central region, such as the national referral hospital, regional hospitals, district health offices and health centres. Out of 910 questionnaires, 655 were usable, yielding a response rate of 70%. The questionnaire consisted of 44 items measuring six variables: talent attraction, talent pool, organisational support, reward system, work conditions and social and work environment. Responses were captured using a seven-point Likert scale. Data was analysed to assess the reliability (via Cronbach's alpha) and validity (via factor analysis).

Findings

- There is a positive relationship between talent pool and talent attraction. Institutions with a well-developed pool of high-potential employees are more likely to attract new talent.

- Organisational support significantly influences talent attraction. Employees who perceive their organisations as supportive are more committed and likely to recommend the institution to others.

- There is a negative relationship between reward system and talent attraction. This suggests that monetary and non-monetary rewards alone may not be sufficient to attract talent, especially if other organisational factors are lacking.

- Working conditions such as job autonomy, safety and scheduling, positively impact talent attraction. Employees value environments that promote well-being and productivity

- A positive social and work environment, characterised by collaboration, infrastructure and psychosocial support, enhances the attractiveness of public healthcare institutions.

Conclusion

Organisational factors play a critical role in attracting talent to public healthcare institutions in Uganda. Specifically, the presence of a strong talent pool, supportive organisations, favourable work conditions and a positive social and work environment are critical for talent attraction. Conversely, the reward system, while traditionally viewed as a motivator, may not be effective in isolation and requires

integration with other supportive measures. By prioritising these organisational factors, public healthcare institutions can enhance their appeal to professionals, reduce workforce shortages and improve the quality of healthcare services. The study makes a significant contribution to the growing body of knowledge on talent attraction in the healthcare sector and offers practical insights for policymakers, researchers and practitioners seeking to strengthen the healthcare workforce in Uganda and other emerging countries.

Determinants of Time to Malaria Treatment-Seeking Behaviour Among Caregivers of Children Under Five in Uganda: A Case Study of Apac District

Benard Odur, Bosco Opio, Olivia Nabulya and Paul Mbaka

Introduction

Malaria remains a leading cause of morbidity and mortality in sub-Saharan Africa, with children under five years being particularly vulnerable. In Uganda, malaria accounts for a significant proportion of outpatient visits and hospital admissions, especially in high-transmission regions such as Apac District. Timely treatment-seeking for malaria is critical to prevent severe complications and deaths among children under five. Despite this, delays in seeking care persist due to a combination of socio-demographic, economic, and health system factors.

Previous studies have demonstrated that caregiver education is a key determinant of prompt treatment-seeking. For example, some scholars have found that caregivers with higher education levels are more likely to seek timely care for children with suspected severe malaria in Uganda. Others highlighted the influence of socioeconomic status and gender on health-seeking behaviours in low-and middle-income countries. Medicine stockouts at health facilities have also been shown to significantly delay treatment-seeking, while financial constraints can further exacerbate delays. Regional variations indicate that local context including cultural beliefs, malaria prevalence, accessibility of health services, and household resources plays a crucial role in shaping treatment-seeking behaviour.

Objectives of the Study

- To assess the time caregivers, take to seek malaria treatment for children under five in Apac District.

- To identify socio-demographic, economic, and health system factors influencing treatment-seeking behaviour.

- To evaluate the impact of education, medicine availability, and financial barriers on delays in care.

Methods

This study employed a cross-sectional design to assess malaria treatment-seeking behaviour among caregivers of children under five in Apac District, northern Uganda. Data were collected using structured questionnaires administered to caregivers at selected households and health facilities. Key variables included socio-demographic characteristics (education, marital status, employment, wealth

index), health system factors (availability of medicines, choice of health facility), and delays in seeking treatment. The time to treatment was analysed using the Cox proportional hazards model to identify factors associated with prompt or delayed care. Ethical clearance was obtained from the College of Business and Management Sciences Research Ethics Committee (CoBAMS-REC-2022-36) and the Uganda National Council for Science and Technology (UNCST), with voluntary informed consent obtained from all participants.

Findings

The study found that caregivers with secondary education sought treatment 67% faster than those with no formal education (HR = 1.67, p = 0.044), whereas tertiary education did not show a statistically significant effect, likely due to a small sample size. Delays were significantly associated with medicine shortages at health facilities (HR = 0.61, p = 0.001) and financial constraints (HR = 0.49, p < 0.001). Marital status, employment, and wealth index did not significantly affect treatment-seeking times. On average, caregivers waited 8 hours before seeking care, with only about 25% of children treated within 24 hours.

The findings indicate that caregiver education, medicine availability, and financial capacity strongly influence timely treatment-seeking. Secondary education alone appears sufficient to improve health-seeking behaviour. Medicine stockouts and economic barriers contribute to substantial delays. Regional comparisons show variations in treatment-seeking behaviour, emphasising the need for context-specific interventions. Strengthening community education, ensuring consistent drug supply, and addressing financial barriers can improve timely malaria treatment.

Conclusion

Delays in seeking malaria treatment for children under five are influenced by caregiver education, medicine availability, and economic constraints. Interventions should include community-based education campaigns tailored to literacy levels, reliable supply of essential medicines, financial support for low-income families, and enhanced engagement of community health workers to connect caregivers with timely care. These measures are critical for reducing morbidity and mortality from malaria in high-burden areas like Apac District.

Efficiency of Government Spending in Africa: A Case Study of Health and Education Sectors

Bruno L. Yawe, Steven Katende and Lean N. Ankunda

Introduction

Government spending on education and health in developing countries has captured the attention of numerous researchers and development partners due to its critical role in economic development, economic growth, individual well-being and poverty reduction. Optimising government expenditure is important to achieve sustainable growth and improved living standards. The efficiency of government spending, therefore, remains a fundamental concern, as inefficient allocation and utilisation of resources can undermine policy objectives, retard socioeconomic progress and limit the attainment of the sustainable development goals.

The paper seeks to understand how efficiency of public expenditure varies across the sectors of education and health in African countries. It also seeks to understand how the efficiency of government spending on education and health has evolved over time in Africa. While efficiency is a cherished attribute in public policy, it is rarely measured and monitored regularly. One of the ways to ensure that resources are efficiently deployed is to measure efficiency. This paper also seeks to estimate the efficiency of government spending on health and education in 48 selected African countries from 2000 to 2023.

Methods

The study used data on public sector inputs and outputs on health and education in Africa. Health and education expenditure per country are used as the inputs. The outputs considered are health and education outcomes such as life expectancy, and DPT and measles immunisation rates. For education, the outputs include completion rates for primary and secondary education. Data on the input and output variables were gathered for the period 2000–2023. Data were sourced from World Bank, World Development Indicators, World Health Organisation, Global Health Expenditure Database. The Free Disposal Hull (FDH) technique was used to estimate the efficiency in production of education and health outputs for each country in a market environment. The DEA-Malmquist index method was employed to assess and compute efficiency by comparing the ratio of a given year's efficiency to that of the previous year. This approach captured the changes in total factor efficiency from a dynamic perspective.

Findings

The DEA-FDH output-oriented model evaluates the ability of governments to

transform health sector spending into improved health outcomes, proxied by life expectancy, DPT immunisation and measles immunisation rates. Findings reveal spatial and temporal variations in efficiency scores across countries and periods. A subset of countries consistently attained technical efficiency scores equal to 1.00 across both periods. These include Algeria, Gambia, Morocco, Tunisia, Sao Tome and Principe, and Cabo Verde. For these countries, the DEA-FDH model suggests they were on the efficiency frontier, utilising available resources optimally to generate superior health outcomes relative to peers. Their respective super-efficiency scores ranged substantially, with Cabo Verde, Seychelles, and Tunisia registering exceptionally high values, indicating robust dominance even among technically efficient peers.

Conversely, several large and strategically significant economies exhibited persistently low efficiency scores across both periods. Nigeria, South Africa, Ethiopia, Egypt, and Uganda consistently posted efficiency scores below 0.10, implying severe inefficiencies in converting health expenditure into desired health outcomes. Notably, South Africa and Egypt recorded efficiency scores approaching zero in both periods, despite relatively high absolute levels of health spending. These findings raise concerns about allocative and technical inefficiencies potentially linked to institutional quality, health system governance, or the composition of spending.

Furthermore, we observe performance dynamics over time. For example, Rwanda experienced a marked decline in technical efficiency between 2013–2017 and 2018–2023 (ES: 1.00 to 0.17), suggesting growing inefficiencies or deteriorating marginal returns to spending. Meanwhile, countries like Mauritius and Comoros experienced fluctuations in performance, with Mauritius moving from an efficient (ES = 1.00, SES = 4.62) to a moderately inefficient position (ES = 0.46), possibly due to rising costs or demographic pressures. The presence of infinite super-efficiency scores, particularly for Algeria, Morocco, and Tunisia, indicates that these countries significantly outperformed others in transforming inputs into outputs and were thus far removed from the efficiency frontier defined by inefficient units. These cases provide useful benchmarks for policy learning and regional peer comparisons.

In general, North African countries demonstrated stronger performance relative to sub-Saharan counterparts, underscoring potential structural, institutional, or policy differences. Many Central and West African nations, such as Chad, Burkina Faso, Guinea, and Liberia, exhibited persistent inefficiencies, suggesting the need for reforms focused on improving technical capacity and accountability in health sector resource use. These results highlight the critical importance of not only increasing health expenditures but also ensuring their effective deployment. Efficient spending practices, strategic investments in primary health systems, and performance-based allocation mechanisms may help lagging countries improve health outcomes without necessarily increasing fiscal outlays.

Conclusion

The findings provide critical insights into the persistent challenges and divergent trajectories of public spending efficiency across African economies. The analysis reveals a pervasive pattern of inefficiency in both health and education sectors. While a few countries such as Cabo Verde, Seychelles, Gambia, Tunisia, and Sao Tome and Principe consistently achieved full technical efficiency, the majority of countries exhibited suboptimal performance. In contrast, major economies such as Nigeria, South Africa, and Egypt, despite their high absolute spending levels, were among the least efficient. The Malmquist Productivity Index (MPI) analysis demonstrates that total factor productivity (TFP) declined in both sectors over (2000-2023) period, primarily driven by technological stagnation.

Identifying Predictors of Utilisation of Skilled Birth Attendance in Uganda through Interpretable Machine Learning

Shaheen MZ Memon, Robert Wamala, and Ignace H. Kabano

Introduction

Skilled Birth Attendance (SBA) is a critical intervention to reduce maternal and neonatal mortality. While coverage in Uganda rose from 35% in the 1990s to 74% in 2016, it remains below the national target of 90%. Determinants of SBA identified in prior studies include education, antenatal care (ANC), wealth, residence, and distance to facilities. Most research has used traditional statistical methods, which are limited in handling complex, imbalanced datasets. Machine Learning (ML), combined with interpretability tools such as SHAP, provides stronger prediction and clearer explanations of key determinants.

The paper takes interest in which socio-demographic, economic, and obstetric factors most influence SBA use in Uganda. It also bothers with how interpretable ML can improve prediction and policy relevance compared to traditional approaches.

Methods

The secondary analysis of 2016 Uganda Demographic and Health Survey (UDHS) data, focusing on 9,611 women aged 15-49 with a live birth in the last five years.

- **Variables:** Organised under Andersen's Behavioural Model into predisposing, enabling, and need factors, plus the Sex-Marriage-Birth (SMB) sequence.

- **Preprocessing:** Outlier removal, KNN imputation for missing data, Cramér's V for multicollinearity, one-hot/label encoding for categorical features.

- **Class imbalance:** Addressed via cost-sensitive learning (class weights).

- **Feature selection:** Elastic Net regularisation.

- **Models:** Logistic regression, decision tree, random forest, gradient boosting, XGBoost, LightGBM, CatBoost.

- **Tuning:** Bayesian optimisation with five-fold cross-validation, prioritising F1-score for non-SBA cases.

- **Interpretability:** SHAP used to explain feature contributions globally and locally.

Findings

- **Model performance:** XGBoost was best-performing (F1-score 0.52, recall 0.73, AUC 0.75). Moderate metrics reflect the challenge of predicting imbalanced maternal outcomes but align with similar studies in Africa.

- **Top predictors:**

Education level

Number of ANC visits

Region (Northern Uganda showed higher likelihood once adjusted)

Perceived distance to health facility

Urban vs rural residence

- **Interpretability:** SHAP revealed both the direction and strength of each factor's influence, confirming that higher education, more ANC visits, and urban residence increased SBA use, while distance barriers and rural residence reduced it.

Conclusion

This study demonstrates the value of interpretable ML in maternal health research. By combining predictive modelling with SHAP explanations, we not only identified key determinants of SBA but also provided transparent, actionable insights. Education, ANC use, residence, region, and distance barriers are critical factors shaping SBA uptake in Uganda. Targeted interventions addressing these determinants, especially for rural and less educated women, can support Uganda's efforts to reduce maternal and neonatal mortality.

Sexual Initiation and the Timing of First Union among Women in Uganda

Charles Lwanga, *Dick Nsimbi, Ishmael kalule-Sabiti, Kudzaishe Mangombe, and Jude Otim*

Introduction

The waiting time between sexual debut and the formation of a first union (marriage or cohabitation) is a critical, yet under-researched, interval with significant reproductive health consequences for young women in Uganda. Early sexual initiation and early marriage are prevalent, contributing to high rates of adolescent pregnancy, fertility, and exposure to sexually transmitted infections (STIs), including HIV. In Uganda, the median age at first marriage is approximately 17.9 years, and the median age at first sexual debut is around 16.8 years, resulting in a critical gap of about one year. However, for a substantial proportion of women, this gap is much longer and is a time of increased risk. This gap is a key determinant of exposure to reproductive health risks including unintended pregnancy, HIV/ STIs, and multiple partners, posing a significant challenge to achieving Sustainable Development Goals (SDG) 3 (Good Health and Well-being) and SDG 5 (Gender Equality). Early sexual initiation, particularly before age 15, is a recognised risk factor for delayed transition to a stable union, which may be linked to serial monogamy and having multiple concurrent partners, increasing health, and social vulnerability. Understanding the socioeconomic and demographic factors that influence the length of this gap is essential for targeted policy and programmatic interventions in the SDG era.

Methods

Self-reported data from the individual record file were extracted from the 2016 Uganda Demographic and Health Survey (UDHS), comprising a subsample of 4293 women aged 15-25. The subsample consisted of women who had experienced both sexual debut and first union. The outcome variable was the waiting time between the age at first sexual intercourse and the age at first union. Key independent variables include a woman's age at sexual debut (e.g., <15 years, 15−19 years, ≥20 years), current age group, education level, wealth index, region of residence, urban/ rural residence, and childbearing status (whether a birth occurred in the interval). We utilise Kaplan-Meier survival estimates to estimate the mean and median waiting time and to visualise the transition over time; and logistic regression of multivariable event history analysis were applied to period-oriented data to isolate significant factors influencing the timing of the first union following sexual debut.

Findings

Descriptive results indicated that the average and median waiting time between sexual debut and first union for women in Uganda is significant, estimated at approximately 5.6 years and 5.5 years, respectively. The implication is that young women are exposed to prolonged periods of risk outside of formal union (marriage or cohabitation). Women who had their sexual debut at a younger age (before age 15) were found to have a significantly longer waiting time (mean gap of about 6 years or more) before transitioning to a first union. This longer interval is hypothesised to be linked to engaging in serial monogamy or having multiple, concurrent partners, which may complicate or delay subsequent union formation.

On the contrary, a sexual debut between 15–19 years was associated with a shorter interval. In addition, the waiting time was found to be strongly associated with several socioeconomic factors, including wealth index in which women in the wealthiest quintile tended to have a longer waiting time (mean gap of nearly 6 years) compared to those in the poorest quintile (mean gap of about 5 years). Women residing in Kampala and the surrounding central region generally exhibit longer intervals between sexual debut and first union, reflecting greater modernisation and a delayed transition to formal partnerships in urban centres. Women who experienced a birth in the interval (prior to the first formal union) had a significantly longer time until union formation (an average of over 8 years), suggesting that premarital childbearing may complicate or delay marriage. Women in the age group 20–25 years had a disproportionately lower risk of transitioning to a first union, suggesting that modern social development aspects may be shifting the traditional expectation that a woman must quickly transition from sexual activity to a formal union.

Conclusion

The substantial gap of over five years, on average, between sexual debut and first union in Uganda represents a prolonged window of vulnerability for women's sexual and reproductive health. The study highlights that the age at sexual debut and the woman's current age are the most significant factors influencing the pace of transition to a first union. Early sexual initiation (before age 15) paradoxically leads to a delayed first union, likely due to unstable relationship patterns in adolescence as well as the law which prohibits union formation before age 18.

In terms of policy, we advocate for three policies including; a need to implement comprehensive sexual and reproductive health programs in schools and communities to promote delayed sexual initiation, especially for the most vulnerable young girls; provide young, sexually active, and unmarried women with accessible, youth-friendly services for family planning and STI/HIV prevention to protect their health during the long interval before union formation; and a need to address socioeconomic disparities so as to empower economically disadvantaged young women and address regional variations to ensure a healthier transition to adulthood and formal partnerships.

Modelling Child Anaemia and co-existing infections using Log-Linear models

Grace Kakaire, Gregory Kerich, Robert Too and Mathew Kosgei

Background

Uganda grapples with a considerable anaemia-malaria-fever burden, reporting approximate prevalence rates as high as 33%, 34%, and 37% in specific regions. In recent years, attempts have been made by the Ministry of Health to address the combined burden of the characterised conditions of these illnesses. However, the relationship between malaria, fever, and anaemia has not been well characterised among young children living in many communities. By employing log-linear models, this study aims to examine patterns and associations between malaria, fever, and child anaemia in Uganda while controlling for maternal anaemia.

Methods

Utilising secondary data from the 2018-2019 Uganda Malaria Indicator Survey (MIS), the study focused on children aged 0-60 months. The sample included 7,124 children selected through a two-stage sampling process involving clusters and households. Five log linear models, namely; saturated, mutual independence, joint independence, conditional independence and homogenous models were fitted. The saturated model was used as the reference model.

Findings

The G^2 statistics and p-values for each model were as follows: saturated model ($G^2 = 0.00$, p=1.00), mutual independence model ($G^2 = 321.45$, p<0.001), joint independence model ($G^2 = 214$, p<0.001), conditional independence model ($G^2 = 109.53$, p<0.001), and homogeneous model ($G^2 = 10.24$, p=0.76). The homogeneous model adequately fit the data, showing the smallest G^2 statistic and the largest p-value, indicating no significant lack of fit. Additionally, children who tested positive for malaria were found to be two times more likely to have anaemia than those who tested negative.

Conclusion

This study underscores the interconnectedness of malaria, fever, and anaemia in Ugandan children, with maternal anaemia serving as a critical contextual factor. Using log-linear modelling, uncovered patterns and interactions that highlight how these conditions influence one another, emphasising the value of integrated interventions. Targeted approaches that address maternal health, enhance malaria prevention, and provide nutritional support are essential to reducing the syndemic burden of these conditions in Uganda.

Correlates of Parental Supervisory Neglect among Children Under Five Years in Uganda

Candia Douglas Andabati, Namugenyi Christabellah, Agaba Peninah

Introduction

The most frequently cited cause of injuries to young children at home is inadequate supervision. Many children across the globe spend time at home on their own or under the supervision of another child in the absence of an adult. Supervisory neglect (SN) refers to behaviours exhibited by a parent or caregiver that disregard a child's safety within or outside a home and expose them to harmful situations. According to a Uganda Police Report of 2022, a total of 6505 cases of child neglect were reported to the Uganda Police Force in the year 2022, which was a 31.3 percent increase compared to the cases reported in 2021. SN includes not watching children close enough, leaving children on their own to care for themselves, leaving children with inadequate substitute caregivers, allowing a child to participate in harmful activities among others, leaving children with a suitable caretaker but without their consent or sufficient planning, abandoning a child or refusing custody, leaving a child with an unsuitable caretaker, exposing a child to abuse, exposing a child to a person engaged in inappropriate activities, and driving recklessly or under intoxication.

SN has been associated with several negative consequences in children's lives, including peer relationship problems, hyperactivity, depression, low self-esteem, dental caries, delinquency behaviours, death, reduced social capital, etc. Some of the causes of SN reported in the literature include the caregiver's or parent's drug or alcohol use, mental health challenges, employment outside the home, having older children, the young age of parents, and having fewer adults at home. If not addressed, this could hinder Uganda's achievement of SDG target 16.2 that aims to end all forms of abuse, exploitation, trafficking and all forms of violence against and torture of children.

This study seeks to ascertain the association between parental factors and SN among children under five years in Uganda. It also seeks to determine the relationship between child characteristics and SN among children under five years in Uganda.

Methods

This study used secondary data from the 2016 Uganda Demographic and Health Survey and data was analysed using STATA version 15. Frequencies and percentages were used for univariate analysis. For bivariate analysis, Pearson's chi-square test was used to analyse the association between each categorical variable

and the dependent variable. For multivariable analysis, a logistic regression model was used at a 5% significance level.

Findings

The study finds that age of child, singing songs to the child, taking children outside, playing with children, frequency of listening to radio and watching television, age of household head, maternal education level, wealth index, household size, and region were significantly associated with parental supervisory neglect.

Conclusion

Several factors were found to protect children from experiencing PSN. These included singing songs to the child, being younger than six months old (child factors), having a mother with a higher level of education, and having parents who do not listen to the radio or watch television (maternal/parental factors). Household-related protective factors included a higher wealth index, living in a smaller household (1–3 members), and residing in the central region. PSN is influenced by child, parental/maternal, and household factors. Addressing PSN requires targeted interventions at parental and household levels.

The Ordering of Marriage, Sex, Birth and Pregnancy Disruption: Insights from a Cross-sectional Study in Uganda

Claire Ashaba, Christabellah Namugenyi, Douglas Andabati Candia, John A Mushomi, Asiimwe John Bosco, Benard Odur, Zabibu Afazali and Shaheen Memon

Introduction

Reproductive health is a key determinant of women's overall well-being and socio-economic status. However, the decision-making environment surrounding women's sexual and reproductive health is changing rapidly. In many developing countries, sexual initiation among young adults is increasing or remains high, while the traditional link between marriage and childbirth is weakening, heightening reproductive health risks. The timing and sequence of sexual initiation, marriage, and childbirth critically shape reproductive health outcomes, including pregnancy termination. Although cultural norms have traditionally defined these events in a particular order - early marriage followed by sexual activity and childbirth - shifting social norms have led to greater misalignment, increasing the likelihood of risky reproductive behaviours and outcomes such as pregnancy termination.

Uganda offers a distinctive setting for examining the links between sexual initiation, marriage, and childbirth due to its diverse cultural and socio-economic context. The country experiences high rates of early sexual activity, early marriage, and teenage pregnancies, all of which shape women's reproductive health outcomes. However, research exploring how the sequence of these life events influences pregnancy termination remains limited. Pregnancy termination whether induced or spontaneous poses serious health risks, especially in Uganda, where restrictive abortion laws and inadequate access to safe services drive many women toward unsafe procedures, increasing maternal morbidity and mortality. Using data from the Uganda Demographic and Health Survey, the study categorises women's life trajectories into four event sequences - Marriage-Sex-Birth (MSB), Sex-Marriage-Birth (SMB), Sex-Birth-Marriage (SBM), and Sex-Birth-no-Marriage (SBnoM) - to analyse how the timing and order of these events influence pregnancy termination in Uganda's challenging reproductive health landscape.

Methods

The study used secondary data from the 2016 Uganda Demographic and Health Survey (UDHS), which included 18,506 women aged 15–49 years. The dependent variable was pregnancy disruption, defined as a binary outcome (ever terminated a pregnancy vs. never terminated). The main independent variable was the sequence

of first sex, first birth, and first marriage, categorised into four patterns: Marriage–Sex–Birth (MSB), Sex–Marriage–Birth (SMB), Sex–Birth–Marriage (SBM), and Sex–Birth–no Marriage (SBnoM). Several control variables were included, i.e., age group, religion, education, marital status, household wealth index, employment status, sex of household head, number of children ever born, contraceptive use, and a combined region–residence variable treated as a random effect. A multilevel binary logistic regression was employed, with four model levels: random effects (empty model), community/exposure-level variables (e.g., sex of household head, employment status, individual-level variables and a full model combining all levels. Model performance was compared using the Akaike Information Criterion (AIC), and Adjusted Odds Ratios (AORs) at a 5% significance level were used to interpret the effects of explanatory variables on pregnancy disruption.

Findings

The study found that the sequence of marriage, sexual initiation, and childbirth significantly influences pregnancy disruption among Ugandan women. Women following the Marriage–Sex–Birth (MSB) and Sex–Birth–Marriage (SBM) sequences had notably higher odds of pregnancy disruption compared to those who experienced Sex–Birth–no Marriage (SBnoM), suggesting that deviations from traditional reproductive sequences increase the risk of pregnancy termination. Older women (ages 25–49) were also more likely to experience pregnancy disruption, highlighting age as a strong predictor. In contrast, education level, marital status, number of children, occupation, and sex of household head showed no significant effects. However, contraceptive use mattered. Women relying on traditional methods or no contraception faced higher odds of disruption than those using modern contraceptives, emphasising the importance of access to effective family planning. Overall, individual-level factors best explained pregnancy disruption patterns, underscoring how personal life trajectories and contraceptive behaviours intersect with socio-cultural norms to shape reproductive health outcomes in Uganda.

Conclusion

The analysis highlights that the sequence of marriage, sexual initiation, and childbirth is a key determinant of pregnancy disruption in sub-Saharan Africa, with deviations from traditional life-event orders linked to higher risks. This reflects how shifting social norms, stigma, and limited support systems contribute to adverse reproductive outcomes. Age also emerged as a strong predictor as older women face increased odds of pregnancy disruption due to biological and socio-economic vulnerabilities. Although education, marital status, and household head gender were not significant predictors, the findings suggest that these factors interact in complex ways with broader social and cultural dynamics influencing women's reproductive health.

Predictors of Time-to-Contraceptive use from First Sexual Intercourse Among Young Women in East Africa

Allen Kabagenyi, Vincent Kayemba, Ronald Wasswa, Shaheen Memon, Betty Nankunda, Gideon Rutaremwa and William Muhwava

Introduction

Adolescents and young women in East Africa face profound sexual and reproductive health (SRH) challenges, shaped by early sexual debut, low uptake of contraception, and persistently high rates of unintended pregnancies. This study investigated the predictors of time-to-contraceptive use after first sexual intercourse among young women in Burundi, Kenya, Rwanda, Tanzania, and Uganda.

Methods

This is a cross-sectional study design based on the Demographic and Health Survey data of five East African countries including Burundi (n=2600), Kenya (n=6880), Rwanda (n=2067), Tanzania (n=3604) and Uganda (n=5221). The analysis was done using descriptive and survival analysis techniques.

Findings

Timing of modern contraceptive uptake after first sexual intercourse varied by country and age at first sex. By country, there was evidence of early adoption in Rwanda and Kenya compared to the other East African countries. By age at first sex, results showed a delay ranging between 2 years among women aged 20-24 years and 6 years for those below age 15. In all the countries very few young women adopted modern contraceptive use within one year after their first sexual intercourse. The proportions of early adopters ranged between 8.5% in Tanzania and 27.7% in Rwanda. Age, highest education level, religion, marital status, knowledge of where to obtain contraceptives, and perceptions on distance to nearest health facility were significantly associated with time-to-contraceptive use. The other variables included exposure to family planning messages, knowledge about the ovulatory cycle, having ever heard about sexually transmitted infections (STIs) and the total number of children ever born.

Conclusion

A small proportion of young women in East Africa generally adopt contraception within a year of sexual initiation, revealing an eminent gap in reproductive health programming. Targeted interventions should prioritise timely, age-appropriate sexuality education to equip adolescents with knowledge of their reproductive health rights, contraceptive choices, and access options.

Inconsistencies in Caregiver-adolescent Reports on Sexual and Reproductive Health Communication in a Ugandan HIV Hotspot: A Mixed-methods Study

Patricia Ndugga, Betty Kwagala, Lodrick Odo Wabwire and Olivia Nankinga

Introduction

There is growing evidence that many adolescents prefer their parents as sources of accurate sexual and reproductive health (SRH) information. Parents play a significant role in averting poor sexual and reproductive health outcomes (such as engaging in unprotected sex, early sexual debut) among their children. Through open and honest communication about SRH issues, parents can provide adolescents with accurate information, promote healthy attitudes towards sex, and help to prevent negative consequences such as unintended pregnancy, STIs, and HIV/AIDS. Effective communication on SRH issues between parents and children can lead to positive changes in adolescents' attitudes, norms, practices and knowledge about sexual behaviour.

Previous studies on parent-child communication about SRH in Uganda have been conducted in non-border settings among adolescents from lower-risk environments, while those in border settings have not focused on dyads involving both caregivers and adolescents. A dyadic approach ascertains whether disparities exist in the perception of SRH communication between the two groups.

Therefore, this study investigates the prevalence of caregiver-adolescent communication on SRH, using a dyadic approach and explored inconsistencies of SRH communication between caregivers and children residing in an HIV hotspot. The study exclusively focuses on an under-researched setting - an HIV hotspot within a border context, where adolescents are more vulnerable to poorer sexual and reproductive health outcomes compared to those from non-border settings.

Methods

We conducted a mixed-methods study among caregivers and adolescents (10-17 years) in Kyotera border district. Kyotera was purposively selected due to its notably high HIV prevalence rate of 12.2%, which is higher than the national average of 5.8%. A cross-sectional survey for both caregivers and adolescents was administered among 449 caregiver-adolescent dyads. Quantitative data were electronically collected using computer assisted personal interviewing with ODK software to cut out data entry cost and ensure high quality data.

Concurrently, eight focus group discussions (FGDs) were conducted among

caregivers (n=4) and adolescents (n=4). FGDs were used to capture a wide range of views to enable interaction between participants with differing experiences regarding caregiver-adolescent communication which provided greater insight into attitudes, perceptions, beliefs and practices. An FGD guide, translated into Luganda, was used to facilitate the discussions. The data collected were used to contextualise and triangulate information collected from the quantitative survey.

Quantitative data were analysed using binary logistic regression, while qualitative data were analysed using thematic analysis.

Findings

A greater proportion of caregivers (33%) than adolescents (24%) reported inconsistencies in SRH communication. Caregivers who were unmarried had a higher likelihood of reporting such inconsistencies (OR = 2.99; 95% CI: 1.43–6.24) compared to those who were married, as did employed caregivers (OR = 1.88; 95% CI: 1.01–3.47) compared to their unemployed counterparts.

Among adolescents, the odds of reporting inconsistent perspectives were lower for those living solely with their mothers (OR = 0.40; 95% CI: 0.17–0.95) or with close relatives (OR = 0.53; 95% CI: 0.30–0.95), compared with those residing with both a male and a female caregiver. Qualitative data revealed that factors such as presence of mixed nationalities with diverse social norms and the prevalence of single-mother households- common in the study area—may contribute to limited supervision, guidance, and support for adolescents, as single mothers often bear the full burden of providing for the family.

Conclusion

This study set out to establish whether inconsistencies exist in reports of SRH communication between caregivers and adolescents in Kyotera border district. The study reveals that some caregiver-adolescent SRH communication is happening. However, there are inconsistent reports on SRH communication between caregivers and adolescents. This inconsistency is an indication that whereas communication is happening, it is not fully effective. Therefore, it is paramount to sensitise and strengthen the capacity of the caregivers especially mothers to appreciate and proactively play their parenting role and make them better communicators of SRH matters to their children. This should be done through community outreach programs and platforms.

SDG 4
Quality Education

This section outlines that the papers aligned to SDG 4 that emphasises ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all. It aims to guarantee that all boys and girls complete free, equitable, and quality primary and secondary education, leading to relevant learning outcomes, while also increasing access to vocational training and higher education as well as promoting skills for decent jobs and innovation throughout life. Specifically, the goal aims to ensure all children and youth complete free, equitable, and quality primary and secondary education; increasing the number of youth and adults with relevant skills for employment, decent jobs, and entrepreneurship; promoting continuous learning opportunities throughout life, including early childhood education and adult learning; addressing gender and income disparities in access to education and eliminating gender bias, as well as fostering effective learning outcomes, ensuring people acquire the knowledge and skills for sustainable development.

Correlates of Girls' Transition to Lower Secondary School for Scholarship Aided Education in Refugees Hosting Districts in Uganda

James Wokadala and Leonard K. Atuhaire

Introduction

This paper aims to assess the correlates of girls' transition to lower secondary school for scholarship education in refugee-hosting districts in Uganda. The study employs logistic regression on the cross-sectional data collected in November 2024 from 8,684 pupils registered in 612 primary schools (both public and private). Data were collected through surveys, review of policy/programme documents, and analysis of recent UBoS data such as UNHS and UDHS, which are very crucial in project implementation. The survey targeted mainly girls in grade 7 preparing the sit for their end of grade 7 cycle examination. The data collected included the pupil, caregiver, as well as school demographic factors, the pupil's study motivation after grade 7, the chronic illness and general disability related factors among others. Data on learners was collected from 7 districts that include Yumbe (1,593), Madi-Okollo (332), Adjumani (1,684) and Nebbi (514) (from West Nile), Lamwo (1,221) and Kitgum (1,559) districts (in Acholi northern region), and Oyam (1,781) in Lira sub-region, respectively.

Findings

Descriptive statistics reveal that 3119 (35.9%) pupils transited to secondary schools in 2025 to access the scholarship education, while 5,565 (64.1%) did not, respectively. Of those that transited, about 12% (=373) were refugee learners, 6.3% (=197) have chronic ill health conditions, 8.0% (=248) had forms of disabilities while about one tenth (=310) of them were mother orphaned. Overall, there was significant association between transition and nationality of the learners as reported by $\chi2=299.36$ (p-value = 0.000); pupils with chronic illness ($\chi2=46.2$, p-value = 0.000) and pupils with forms disability ($\chi2=21.26$, p-value=0.000), respectively.

The logistic results reveal that the increase in student's age reduces the odds of transition by 0.091. Further, having a living mother or father significantly (at 1%) reduces the odds for transition to scholarship education, by 0.284 and 0.476 respectively. This implies that orphan-hood of the students was favourably preferred for eligibility for the scholarship. Conversely, ill health conditions and forms of disability significantly increase the odds by 0.901 and 0.316, respectively. Further, the interaction effect of either parent alive or also living with them reduces the significance level of mother alive to make it insignificant.

Conclusion

In conclusion, all these indicators were favourably preferred for eligibility for the scholarship. Thus, the targeting and the selection of the eligible beneficiaries for the scholarship was based on contextualised targeting procedures and processes. Such processes ought to be replicated in similar and related studies.

Estimating the Optimum Number of Attempts for any University Examination: A Negative Binomial Approach

Omala, Saint Kizito, *Olive D Buhule, Hassan W. Kayondo, Christabellah Namugenyi, and Susan Habert Sendege*

Introduction

Institutions of higher learning often face the challenge of determining whether students qualify for progression to higher levels or for the award of academic degrees. Consequently, many adopt a conjunctive standard-setting strategy, requiring students to re-sit failed examinations until they pass. University policies commonly limit such attempts to a maximum of three per module. However, applying a uniform limit across all modules and programs assumes equal probabilities of success for all students, programs, and examination attempts - an assumption that may not hold. Several factors may influence these probabilities:

- Increasing study loads may reduce the time available for re-sit preparation.

- Prior exposure to the examination may advantage or disadvantage students.

- Variations in exam content, teaching scope, or instructors can affect outcomes.

- Students facing a final permitted attempt may invest more effort to ensure success.

In this context, the study aimed to provide empirical evidence on the optimal number of examination attempts students should be allowed, while accounting for both student- and academic-specific factors.

Methods

The number of attempts required to pass a given university module can be modelled using a geometric distribution. However, this assumption implies equal probabilities of passing across all attempts, which may not hold in practice due to various influencing factors. To account for this, the outcome variable, the number of attempts per module, was analysed as a count variable under the negative binomial framework. A key objective of the analysis was to quantify the uncertainty associated with parameter estimates; therefore, a Bayesian approach was adopted in the modelling process.

The analysis focused on students admitted to the School of Statistics and Planning between 2007 and 2011 (inclusive) who registered for fourteen modules over two

years. These modules were selected based on their perceived level of difficulty.

A generalised linear mixed-effects model (GLMM) was adopted to assess variations in academic performance over the source of funding. A negative binomial link was used to address potential over-dispersion in the count data, allowing the mean and variance to differ. The model incorporated random effects to capture variability associated with funding status, specifically, government- versus privately-funded students, and their number of examination attempts. Under the Bayesian framework, the model was estimated using four chains of 2,000 iterations each, enabling flexible inference through posterior distributions. Priors were specified as standardised normal distributions for coefficients ($\mu = 0$, $\sigma = 2$) and a less variable intercept ($\mu = 1$, $\sigma = 0.5$), improving model fit and stability.

Findings

The analysis revealed a posterior mean of 1.1 with a narrow credible interval [1.1, 1.2], indicating that students generally pass within the university's three-attempt policy. At the group level, government-sponsored students made slightly more attempts than privately funded ones, and gender differences were negligible. Variations across degree programs were minimal, suggesting consistent academic performance. However, certain modules - such as Calculus I, Linear Algebra I, and Real Analysis - showed slightly higher mean attempts, reflecting greater difficulty, while others like Computer Literacy and Introduction to Macroeconomics required fewer attempts. Overall, differences in performance across groups and modules were modest.

The Bayesian hierarchical model showed that gender had no significant effect on examination attempts. Private students exhibited a slightly higher overall likelihood of retaking exams than government-sponsored students, though within-group results suggested the opposite trend, indicating potential aggregation effects. These differences may reflect factors such as financial pressure or complacency associated with funding type.

Across programs, students in quantitative disciplines like Actuarial Science, Statistics, and Quantitative Economics were less likely to re-sit examinations, possibly due to stronger academic preparation. Module-level analysis revealed that mathematics-based courses such as Calculus I and Linear Algebra I had the highest likelihood of re-sits, reflecting their conceptual difficulty, while Computer Literacy had the lowest.

There was large variability in the random effect of funding type, suggesting that the influence of financial support on examination behaviour differs widely among students, underscoring the heterogeneous nature of academic performance across funding categories.

Conclusions

The study evaluated Makerere University's policy limiting students to three examination attempts. Using data from the previous examination system, findings showed an average of 1.1 attempts per module, well below the policy limit, even after accounting for student and module differences. No subgroup exceeded three attempts, suggesting the policy effectively balances fairness and academic rigor. Allowing unlimited attempts could weaken standards, while fewer than three could disadvantage students facing challenging modules like Calculus I. The current policy thus provides adequate flexibility and maintains institutional credibility.

Hierarchical linear models for analysis of learner achievement in Primary six literacy in Uganda

Felix Wamono, Francesca Bassi and Saint Kizito Omala

Introduction

National assessments are carried out annually in Uganda to monitor learners' achievement levels in numeracy and literacy at the primary education level to guide policy and planning. However, the analysis of the achievement data is mostly descriptive with some limited bivariate statistical analyses. Such univariate and bivariate analysis fails to account for the simultaneous effect of the different predictors on the outcome variable. The purpose of this paper is to assess the effect of individual pupil-level factors like pupil gender and age and school-level factors like school ownership and location on literacy achievement scores taking into account the hierarchical or clustered structure of the data. We shall also assess whether there are any interactions between the pupil- level factors and school-level factors and assess how these interactions influence learner achievement scores in literacy. Due to the hierarchical or clustered structure of the data, we apply a multilevel linear regression model for the analysis of achievement data. To the best of our knowledge, there are no published papers that used a multilevel linear regression model for analysis of literacy achievement data in Uganda.

Learning achievement data in Uganda have a hierarchical or clustered structure with pupils nested within schools and geographical areas (zones). Multilevel models recognise the existence of such data hierarchies by allowing for residual components at each level in the hierarchy. For example, in our case, a three-level model which allows for grouping of pupil outcomes within zones and schools include residuals at the pupil, school and zone level. Thus, the residual variance is partitioned into a between-zone component (the variance of the zone-level residuals), a between-school component (the variance of the school-level residuals) and a within-school component (the variance of the pupil-level residuals). The zone residuals, often called "zone effects", represent unobserved zonal characteristics that affect pupil outcomes. While the school residuals, often called "school effects", represent unobserved school characteristics that affect pupil outcomes. It is these unobserved variables which lead to correlation between outcomes for pupils from the same zone and/or school. This paper presents a worked example of a hierarchical linear model with extensive discussion about modelling decisions and interpretation

Findings

The findings show that there was a significant difference in performance of pupils studying in privately owned schools compared to pupils studying in government owned schools. Pupils studying in privately owned schools fared better in literacy. Pupils studying in urban schools fared better in literacy than those studying in rural schools. There was a significant difference in performance between schools and

between zones.

Male pupils performed marginally better than their female counterparts. Younger pupils fared better in literacy. The results showed that the effect of gender and age did vary significantly across schools. Literacy achievement deteriorated for an average pupil in a government owned school compared to pupils in a privately owned school, controlling for the influence of pupil gender, pupil age, and school location. Moreover, pupils in an urban school performed better compared to pupils in rural schools, controlling for the effect of pupil gender, pupil age and school ownership. The results reveal that there are big differences in the performance of pupils in government owned and privately owned schools. Pupils who study in privately owned schools performed much better than pupils in government owned schools. This may be attributed to laxity in management in government owned schools compared to privately owned schools. In most privately owned schools in Uganda remuneration is based on attendance and actual teaching as opposed to government owned schools.

For instance, studies have reported that there is a lot of late coming and absenteeism by teachers in Uganda. In addition, the results show that there are big differences in the performance of pupils who study in schools located in urban areas compared to those located in rural areas. Better qualified teachers usually prefer to get employed in urban areas where there is easier access to social services, better infrastructure, and better living conditions. There are also better opportunities for professional development in urban areas. All these factors combined result into better learning outcomes for pupils studying in urban schools compared to pupils attending schools located in rural areas. Based on these findings, we recommend that government should improve management systems in government owned schools and introduce stricter management controls to improve performance of pupils in government owned schools. Government may need to find out how private schools manage and motivate their teachers to ensure that pupils attending private schools attain high grades in literacy.

Conclusion

Government needs to continuously improve infrastructure and living conditions in rural areas to attract well qualified teachers to the remote areas. Incentives could be provided to encourage teachers to serve in remote areas. The incentives may include providing accommodation for teachers serving in remote schools, and/or provide monetary incentives. To address the sex differentials in performance in literacy, government and/or schools may be encouraged to conduct extra lessons for female pupils and/or introduce rewards for good performance in literacy by female pupils. In terms of zonal and school differences in performance of pupils, Government should provide additional capitation grants to low performing schools to help uplift performance in those schools. Deliberate efforts should be made by Government to standardise schools throughout the country.

Feasibility and Preliminary Effectiveness of a Discrete Choice-Based Pre-exposure Prophylaxis Delivery Model for Female Sex Workers in Uganda

Ruth Mpirirwe, AndrewMujugira, Bosco B. Agaba, Joan Nangendo, Mbabazi Lenin Dennis, Fred C. Semitala, Peter Kyambadde, Joan Kalyango, Charles Karamagi, Agnes Kiragga, Anne R. Katahoire and Moses R Kamya

Introduction

The current PrEP delivery models in Uganda do not sufficiently address the distinct socio-economic, cultural, and logistical challenges faced by FSW. Current approaches typically use a one-size-fits-all strategy, which inadequately addresses FSW concerns related to privacy and confidentiality, fear of judgment from healthcare providers and peers, time limitations due to nocturnal work schedules, mobility challenges that hinder attendance for scheduled visits, and the absence of regular follow-ups essential for maintaining high adherence rates.[1,2] As a result, these factors contribute to low adherence, mistrust in the healthcare system, and missed opportunities for effective care, as reflected in the national PrEP data. Involving FSW in the development of PrEP delivery models could enhance retention in care. However, to date, no discrete choice experiments (DCEs)[3] have been conducted in Uganda involving FSWs to better comprehend their specific preferences regarding PrEP delivery.

This study sought to evaluate the feasibility of this tailored PrEP delivery model in improving PrEP uptake, adherence, and effectiveness among FSWs in Kampala, Uganda.

Methods

We conducted a pilot study to evaluate the feasibility and preliminary effectiveness of this PrEP delivery model with 50 FSWs from the MARPI clinic, from March to May 2024. Before participating in the study, FSWs received information about the study's objectives and procedures and signed consent forms. Using a pre-posttest design, we assessed participants' adherence scores before and after the intervention to determine if the facility/health worker/in-person with SMS reminder model influenced any changes in oral PrEP adherence[4]. Feasibility was assessed through questions that were ranked on a Likert scale. The study was approved by the Makerere University School of Medicine Research Ethics Committee (Mak-SOMREC-2022-299) and the Uganda National Council for Science and Technology (SS1223ES)

Findings

This discrete choice experiment involving fifty female sex workers in Uganda suggests that combining in-person care from facility-based nurses with text message reminders improved oral PrEP adherence. The intervention was effective across different religious groups indicating its versatility and the potential for widespread implementation. The combination of facility-based care and mobile health technology (SMS reminders) offers a practical, scalable solution for improving PrEP adherence in real-world settings. This notable improvement in adherence was observed across several key sub-groups, indicating the broad applicability of this model. Specifically, both AGYW and older FSW showed notable increases in adherence. These results align with prior research that highlights the importance of tailored interventions for high-risk populations5. The addition of regular SMS reminders, alongside in-person facility-based care, appears to address the barriers to access and continuity of care that are often faced by FSWs.

Conclusions

Integrating in-person support from facility-based nurses with text message reminders significantly improved oral PrEP adherence among this group of high-risk female sex workers. The rise in adherence scores, absence of participant dropout, and the practical implementation across various subgroups of sex workers underscore the promise of merging face-to-face healthcare with mobile technology. Future studies should evaluate the long-term effectiveness of this DCE-informed approach in sustaining oral PrEP adherence within this population.

The Effectiveness of Information Education And Communication (IEC) Interventions in Reducing Stigma Among Sickle Cell Disease Patients in Alebtong District, Northern Uganda

Peninah Agaba, Olivia Nankinga, Douglas Andabati Candia, Euniky Musiimenta and Tracy Nagawa

Introduction

Several studies conducted in sub-Saharan Africa have reported low or wrong knowledge about SCD and poorer attitudes towards persons with SCD. This results in the persistence of myths and stigmatisation against persons with SCD. If not addressed, the stigma can result in dissatisfaction with oneself, poor health care utilisation, decreased adherence to treatment, depression, and suicide. Stigma affects disclosure, and health-seeking behaviour among adolescents especially after transitioning from paediatric to adult care. Poor attitudes also lead to stigma which threatens voluntary SCD testing, and access to treatment.

Improving peoples' knowledge, attitudes, and practices when engaging with persons with SCD can enable SCD patients to cope with the disease and live a relatively comfortable life as opposed to when they have to deal with disease challenges as well as stigmatisation from the communities. Increasing educative campaigns towards medical providers, schools, and communities can help increase awareness of genetic blood diseases, related complications and their management, as well as premarital screening services. Increased communication and education might be through the utilisation of social media (YouTube, Twitter, Facebook, TikTok, etc), and advertisement campaigns through traditional media channels (Radio, TVs, Newspapers, magazines, etc). Additionally, support groups for patients with SCD may help decrease stigma and validate patients' experiences.

Prior studies have recommended Information, Education and Communication for communities and health providers as avenues for better outcomes. However, in Uganda, SCD advocacy is low compared to HIV/AIDS, Tuberclosis or Malaria. Policy makers have limited information on the effectiveness of the IEC in informing efforts for education on SCD to improve a national strategy. Therefore, this study presents the effectiveness of IEC interventions through a behavioural change campaign in Alebtong district, northern Uganda. This is anticipated that policy makers will scale-up this intervention to reduce SCD morbidity and mortality as well as SCD prevalence through improved knowledge, attitudes and practices for SCD. Thus, aligning with the health systems strengthening framework (information). Therefore, this study set out to find the effectiveness of Information, Education, and Communication (IEC) interventions in reducing stigma among Sickle Cell Disease

patients in Alebtong district, Northern Uganda

Methods

A three-phase study was conducted in three sub-counties in Alebtong District, Lango sub-region, Northern Uganda. A baseline survey to determine the levels of knowledge, attitudes and practices of sickle cell disease was conducted. Then, a behavioural change campaign using IEC materials like posters, banners that were displayed in strategic points in the study area like schools, hospitals and trading centres was done. Workshops with health providers, village health teams (VHTs), and community members were also conducted. Finally, an end-line survey was done to identify changes in levels of KAP after the IEC intervention. Frequency distributions and chi-squared statistics were used to identify the differences in KAP about sickle cell disease between the two periods. After obtaining a pretest measure of the outcome of interest before the behavioural change campaign and after i.e. post-test, the significance of the difference between them was tested at a 95% confidence level.

Findings

Compared to the baseline participants, participants at the end-line had significantly more improvement in knowledge of SCD (p= 0.000), and practice (p= 0.000), but not attitudes towards persons with SCD (p= 0.005). At the end line phase, three-quarters of the respondents had good knowledge (75.3%) compared to 39.0% at baseline ($\chi2 = 148.69$ p=0.000). With regards to attitudes about SCD, there was a slight reduction in the proportion of respondents with good attitudes about sickle cell (72.0% Vs 71.3%) and fair attitudes (23.0% vs. 18.8%) coupled with an increase in persons with poor attitudes (5.0% vs 10.0%) ($\chi2$=10.4549, p=0.005). There was a significant increase in the number of people who tested for sickle cell disease between the two periods. It increased from 4.4% (n=22) to 17.4% (n=87) ($\chi2$= 43.35, p=0.00).

Conclusion

The findings show that there was an improvement in knowledge and practices towards SCD. However, there was a reduction in persons with good attitudes towards persons with SCD. This could mean that either persons had wrong knowledge about SCD or attitudes take long to change & more IEC is needed to improve the attitudes towards persons with SCD. This study provides a basis for policy enactment or revision with regard to the use of IEC to improve KAP towards SCD.

The Role of Maternal Employment in Early Learning and Childhood Education in Uganda

Olivia Nankinga and Betty Kwagala

Introduction

Mothers support for learning in Early childhood is crucial for brain development and shaping productivity throughout the life course (1, 2). Mothers support for childhood learning includes all activities which a mother engages the child in such as reading books or looking at picture books, telling stories, singing songs, going outside of the home, playing, and/or naming, counting, or drawing. Such support is associated with better education and cognitive outcomes in children. Maternal employment has multifaceted effects on supporting early childhood education (3). Previous studies have shown that parental involvement in their child's early learning has an effect on the child's success in school (4). Whereas the role of maternal factors in influencing child development outcomes is documented widely and globally (5, 6), there is limited knowledge of how maternal employment may affect mothers support for learning in early childhood in Uganda, a country which is transitioning from a predominantly peasant agricultural society towards middle-income country. This study examined the association between maternal employment and ECE support in Uganda using data collected during the 2016 Uganda Demographic and Health Survey (UDHS).

Methods

We selected a weighted sample of 4194 cases of the youngest children aged 36-59 months born to working women age 15–49. The outcome variable of this study is "mother's support for learning". This was captured using the questions on whether the mother had engaged with the child in four or more activities (reading books or looking at picture books, telling stories, singing songs, going outside of the home, playing, and/or naming, counting, or drawing) in the 3 days preceding the survey (7). The study considered other explanatory variables including household, maternal and child factors. Frequency distributions were used to describe the background characteristics of the household, women and children. Pearson's chi-squared (χ2) tests and multivariate logistic regressions were used to investigate the associations between ECE support and maternal employment, and other explanatory variables.

Findings

Results show that 22% of the children received ECE support from their mothers. Key determinants of ECE support were maternal employment, economic empowerment, region, household wealth status, maternal age, education, and number of children under 5 years. Children whose mothers engaged in professional work and those in

sales and services had higher odds of receiving maternal ECE support compared with children whose mothers engaged in agriculture (AOR 1.85, 95% CI 1.28-2.68; AOR 1.59, 95% CI 1.22-2.07). Residing in a household in the richest quintile increased the odds of ECE support (AOR = 1.74, 95% CI 1.16-2.60) relative to poorest households.

Children whose mothers had secondary or higher education showed increased odds of receiving ECE support compared with those whose mothers had no formal education (AOR 2.71, 95% CI 1.79-4.10). Children whose mothers had two or more children under 5 years had lower odds of receiving ECE support than children whose mothers had one child under 5 years (AOR 0.80, 95% CI 0.64-1.00). The odds of ECE support were lower for children in the East and North compared with children in the Central region of Uganda (AOR 0.43, 95% CI 0.32-0.57 and AOR 0.55, 95% CI 0.39-0.76). Maternal employer, residence, marital status, religion, and sex of the child did not predict ECE support among children in Uganda.

The significant factors point to the challenge of social and economic inequalities influencing access to early childhood education and hence mother support. Most working women in professional jobs are found in the central region of Uganda where there are many opportunities. Likewise, the distribution of Early Childhood Education centers is skewed towards central region. Economic empowerment (ownership of house or land) was negatively associated with ECE support. In order to improve support for Early Childhood Education, there is need to educate women so that they are not only confined to low paying employment. Education also has the potential to improve children's academic outcomes.

Conclusion

Maternal employment in formal jobs positively predicted provision of ECE support to children below five years. Other predictors of maternal ECE support were household wealth status, region, maternal age, education and number of children below five years. All these factors point to the challenge of social and economic inequalities influencing access to early childhood education and hence mother support.

The Impact of Board Gender Diversity on the Value Relevance of Abnormal Accruals in Sub-Saharan Africa

Diana Ssekiboobo

Introduction

The study examines the impact of female board directors on the value relevance of abnormal accruals. Earnings management depletes the quality of earnings through the manipulation of abnormal accruals. This leads to mispricing and investors' poor valuation of abnormal accruals. In this case, listed firms in sub-Saharan Africa commonly face earnings management. Emerging markets in Sub-Saharan Africa add to the study's uniqueness where board gender diversity is still low, capital markets are developing and regulatory issues still exist under the implementation of the IFRS. However, limited related evidence focuses on developed countries creating inadequate access to value relevance literature. Therefore, to contribute to value relevance studies, this study tests whether board gender diversity affects the pricing and valuation of abnormal accruals. The following hypotheses are derived.

H_1: Board gender diversity increases the value relevance of abnormal accruals.

H_{1A}: Female non-executive directors increase the value relevance of abnormal accruals.

H_{1B}: Female executive directors increase the value relevance of abnormal accruals.

H_{1C}: Female board directors in general increase the value relevance of abnormal accruals.

Methods

This study is backed up by the Random-Walk theory, Agency theory and Conservatism theory. Quantitative data are collected and analysed using Stata 15. All listed firms are initially considered. However, to prevent analytical problems, this study eliminated firms listed after 2018, those delisted and suspended within 2018 to 2022, commercial banks and loss-making firms for that period to prevent negative market impact. The mean proportion of total female directors is 0.23 in South Africa, 0.16 in Nigeria and 0.22 in East Africa. This supports studies that focus on female board underrepresentation in developing countries. A pooled cross-sectional study is used to derive panel regression models for analysis. The random-effects (RE) model is preferred due to the existence of random variables in the study. The data are retrieved from annual reports and verified databases of the listed firms for a five-year period (2018 to 2022) upon which empirical analysis is conducted.

This is by analysing of the relationship between share price or firm market value and abnormal accruals reported by female board members. The modified Jones model is used to measure abnormal accruals. Share price is used to measure market value.

Findings

The findings prove that abnormal accruals in the listed firms are value irrelevant supporting studies other studies that have proved abnormal accruals as a proxy for earnings management, eventually reducing the quality of reported abnormal accruals due to anomalies. Abnormal accruals, when subjected to the proportion of female non-executive directors, they become significantly value-relevant, shown by the significant positive impact on the price (South Africa (β = 0.769, P value = 0.019), Nigeria (β = 0.498, P value = 0.059) and East Africa (β = 1.193, P value = 0.072)). On the contrary, apart from Nigeria, where abnormal accruals reported by the proportion of female executive directors become value-relevant (β = 1.49, P value = 0.057), abnormal accruals remained value-irrelevant in East Africa (β = -2.07, P value = 0.042) and insignificant in the South African market (β = 1.305, P value = 0.164). Still, when subjected to the proportion of total female directors on the board, they become significantly value-relevant, shown by the significant positive impact on the price (South Africa (β = 0.088, P value = 0.060), Nigeria (β = 0.529, P value = 0.047) and East Africa (β = 1.664, P value = 0.037)). In the end, the abnormal accruals that are value-irrelevant become value-relevant in the presence of female board directors, supporting hypotheses H1A and H1C.

The findings prove that female board representation is an important resource for the effective pricing or valuation of accounting information in Sub-Saharan African listed firms. This proves that female board independence supports the agency and conservatism theory by increasing efficient monitoring and accounting, eventually improving the quality of reported abnormal accruals leading to value-relevant abnormal accruals. Therefore, backing up the efficient market hypothesis since all information, including those with a discretionary and risk element attached to it, is incorporated in decision-making and pricing. The findings also back the agency and conservatism theories on the significance of non-executive female directors in improving firm performance.

A critical application of Tobin's Q (Q) is its use as a proxy for the firm's value (Fu et al., 2016). The findings show that using Tobin's Q ratio for market value and abnormal accruals derived from the Kothari model provide similar outcomes and relationships with the variables. Also, Fixed Effects model results show similar outcomes however the errors are slightly higher and adjusted R^2 is lower for the fixed-effects models than in the random-effects estimates. This adds to the robustness of this study. The findings support H1, especially H1A and H1C.

The researcher derives essential implications from this study. The investors are

confident enough to value abnormal accruals susceptible to mispricing and make investment decisions when reported by a gender-diverse board that contained non-executive female directors that would enhance quality financial reporting, eventually, contributing to corporate governance and value relevance literature that is still limited in African countries. The study can contribute to policies for more representation of quality female directors on the boards of listed firms and quality reporting of abnormal accruals.

Furthermore, these policy revisions or changes can promote sustainable economic development and national prosperity. The findings should give room to regulatory innovations and revisions to enhance the successful growth of capital markets and the market reputation of firms as stakeholders will be comfortable associating with the firms. This furthers the desire to create successful African stock markets that are robust and well-regulated. This should eventually promote quality financial reporting and board gender diversity's contribution to the increase in the stock market performance of listed firms in Sub-Saharan Africa. Ultimately, this study will have implications on capital market growth, investment, regulations, policy and academia.

Conclusion

There should be an increase in value relevance studies that promote the confidence to use Tobin's Q ratio and the Kothari model. Lastly, further studies, especially in Africa, are required to promote board gender diversity, decreased earnings manipulation and growth of capital markets. The additional element of the board of directors' qualification and composition should also be included to test the impact of independence and tokenism. This is necessary to check females' utilisation level in decision-making activities versus tokenism and blind quota laws to impact policy decisions or regulations related to the quality of female appointments, especially in sub-Saharan Africa.

Prevalence and Factors Associated with Substance Use Among Adolescent Girls and Young Women Working in Artisanal and Small-scale Gold Mining Communities of Uganda: A cross-sectional Exploratory Study

Betty Kwagala, *Stephen Ojiambo Wandera, Patricia Ndugga, Olivia Nankinga, Fred Ngabirano, and Lydia Kapiriri*

Introduction

Artisanal and small-scale mining (ASM) employs a significant number of adolescent girls and young women (AGYW) who participate in leisure activities that entail the use of substances. Substance use increases their vulnerability to associated health, financial and social burdens. The main objective of this paper is to examine the prevalence and determinants of substance use (alcohol and illicit substances) among AGYW working in ASM communities.

Methods

The paper is based on a cross-sectional survey of 810 females age 15-24 years working in the gold ASM sector of Central (Kassanda and Mubende districts) and Eastern (Busia and Namayingo districts) Uganda. Descriptive analysis included frequency distributions and chi squared tests. For multivariable analysis, we fitted a complementary log-log model to assess the determinants of substance use.

Findings

Nineteen percent (19%) of the respondents used substances. The odds substance use increased among participants who cohabited (AOR 2.07; 95% CI 1.14 - 3.77), and were previously married (AOR 2.20; 95% CI 1.42 - 3.42) compared with those who had never been married; from Central (AOR 7.13; 95% CI 3.92 - 13.00) compared to Eastern region; and those who had multiple sexual partners (AOR 2.24; 95% CI 1.51 - 3.32) compared to those that did not. Other Christians (Born Again and Seventh Day Adventists) had reduced odds of substance use compared to Catholics (AOR 0.61; 95% CI 0.40 - 0.90). Respondents who earned more than $70 (AOR 0.66; 95% 0.46 - 0.96) and those who did not state their earnings (AOR 0.49; 95% CI 0.24 - 0.98) had reduced odds of substance use compared to AGYW who earned less than $70 a month.

Conclusion

The prevalence of substance use in this population is high. It is closely associated with poverty and unstable or stressful sexual or social relations, evidenced by the high odds of use among low income earners, previously married and cohabiting

respondents and those that have multiple sexual partners. Catholic clergy should caution young females against substance use especially in unsafe environments. Effective interventions should take a multi-sectoral approach that considers pertinent psycho social, relational and economic drivers of the problem, targeting the categories at risk.

Country's Legal-religious Affiliation and Corruption in Africa: The Moderating Role of Women Empowerment

Calorine Twongirwe

Introduction

This paper examines the moderating role of women empowerment from countries with varying legal and religious affiliations in reducing the corruption levels on the African continent. The paper conceptualisation offers an intuitive account of women from different legal traditions and religious affiliations through interactions to test the ability of gender parity in muting corruption. The paper focuses on how the interaction between the country's legal origin, religious affiliation and women empowerment impact on corruption levels in Africa. We argue that legal origin has been persistently incorporated into legal systems, education, religion and transmitted from generation to generation. The differences on educational outcome between the common law, civil law and religious affiliations of African countries due to the varying colonial education policies. Thus, Africa context presents a unique environment to understand how legal-religion elements moderated by women empowerment impact on the level of corruption.

Methods

Focusing on a sample of 40 African countries of which 14 belong to common law tradition and 26 to civil law tradition, the study analyses the sensitivity of corruption to women empowerment and legal-religious affiliations interactions. Control of corruption and corruption perception index proxy for corruption as the main dependent variable. Legal origin (common or civil) and Christian or Muslim measures the religious affiliation which are the main independent variables. Gender parity index (GPI) and proportion of women in parliament are the moderating variables.

Findings

The baseline results show a strong negative relation between Christian or GPI variables on corruption while the legal coefficient is insignificant. Further analysis reveals that the coefficient for the interaction of common law and GPI is negative and significant at 5% level after controlling of the income group of the country. These results suggest the importance of women equality in muting corruption. Interestingly, is the coefficient of Christian-PPswomen (women in parliament), the coefficient is strongly negative and significant at 1% level, yet in the full model the PPswomen coefficient is positive and significant while Christian coefficient is insignificant though negative. Thus, these results provide more insight on the role of religion in strengthening women equality to reduce corruption.

Conclusion

This paper contributes to literature on social-political institutions and corruption. While prior studies have generally focused on the developing countries leaving African context rarely explored, this paper adds to the dearth literature that has focused on Africa in analysing these concepts. Most importantly, this paper examines the interactions between legal-religious variables and women empowerment on corruption. These terms have been previous considered in isolation, thus offering new insights in understanding how African countries can be in position to reduce corruption levels considering the social-political environment. Hence this paper has a fundamental implication to the anti-corruption policy makers and organisations to consider tapping into the women potential if they are to reduce corruption.

Disruption of Work or Income-Generating Activities Due to Violence Against Women in Uganda

Peter Kisaakye, Paul Bukuluki, Grace Bulenzi-Gulere, Evelyn Letiyo, Helen Nviiri Laetitia Namirembe and Pamela Kakande Nabukhonzo

Introduction

Despite considerable evidence on the different empowerment programmes that have been implemented in Uganda, there is limited evidence on the intricate relationship between disruption of work or income-generating activities and experience of violence. This paper aims to investigate whether disruption of work or income-generating activities is due to experience of intimate partner violence.

Methods

The data used in this study come from the nationally representative Uganda National Survey on Women's Health and Life Experiences aged (15-59 years). The survey was conducted in 2020 by the Uganda Bureau of Statistics in 15 sub-regions of the country – Kampala, Buganda South, Buganda North, Busoga, Bukedi, Elgon, Teso, Karamoja, Lango, Acholi, West Nile, Bunyoro, Tooro, Ankole, and Kigezi. A sample of 2,711 respondents was systematically selected using random stratified sampling method for interview, but only 1,918 ever-partnered women were included in the analysis.

We generated a variable 'disruption of work or income-generating activities' from four questions: 'In what way, if any, has violence disrupted your work or other income-generating activities? A) Partner interrupted work? B) Unable to concentrate? C) Unable to work/ sick leave? D) Lost confidence in own ability? Respondents who reported 'yes' to any of these questions were categorised as having experienced disruption of work or income-generating activities due to violence.

Emotional violence was measured from responses to the following questions: 'Has your current partner or any other partner ever insulted you or made you feel bad about yourself in the last 12 months?', 'Has your current partner or any other partner ever belittled or humiliated you Infront of other people in the last 12 months?', 'Has your current partner or any other partner ever done things to scare or intimidate you on purpose (including looking at you, yelling or smashing things) in the last 12 months?' and 'Has your current partner or any other partner ever threatened to hurt you or someone you care about in the last 12 months?'. Respondents who reported 'yes' to any of these questions were categorised as having experienced emotional violence.

Physical violence was measured from responses to the following questions: 'Has

your current partner or any other partner ever slapped of thrown something at you that could hurt you in the last 12 months?', 'Has your current partner or any other partner ever pushed you or shoved you in the last 12 months?', 'Has your current partner or any other partner ever hit you with his fist or with something else that could hurt you in the last 12 months?', 'Has your current partner or any other partner ever twisted your arm or pulled your hair in the last 12 months?' 'Has your current partner or any other partner ever kicked you, dragged you or beaten you up in the last 12 months?', 'Has your current partner or any other partner ever chocked or burnt you on purpose in the last 12 months?', and 'Has your current partner or any other partner ever threatened to use or used a gun, knife or other weapon against you in the last 12 months?' Respondents who reported 'yes' to any of these questions were categorised as having experienced physical violence.

Sexual violence was measured from responses to the following questions: 'Has your current partner or any other partner ever physically forced you to have sexual intercourse when you did not want to in the last 12 months?', 'Has your current partner or any other partner ever has sexual intercourse you did not want because you were afraid of what he might do in the last 12 months?' and 'Has your current partner or any other partner ever forced you to do something sexual that you found degrading or humiliating in the last 12 months?' Respondents who reported 'yes' to any of these questions were categorised as having experienced sexual violence.

We created a joint IPV variable (experience of any type of violence) from three variables: experience of emotional, physical or sexual. Any respondent who experienced any of the three types of violence (emotional, physical or sexual) was categorised as having experienced any IPV, otherwise not.

Descriptive statistics (frequencies and percentages) were generated to show the distributions of study participants by selected background characteristics; bivariate chi-square tests to compare disruption of work or income-generating activities by experience of violence (sexual, physical, and emotional); and, estimation of a multivariable logistic regression model to identify the magnitude and direction of association between experiencing violence and disruption of work or income-generating activities controlling for background factors. The results are presented with 95% confidence intervals (CI), and all estimates with p<0.05 were considered to reflect statistically significant associations between the variables of interest and disruption of work or income-generating activities. Results reflect weighted analysis to account for the complex survey design and representativeness using the svy command in STATA. Data were analysed using STATA Version 15.1 [1].

Findings

Results show the distribution of respondents in the study. About a third of respondents (35.7%) were aged 25-34 years, had no access to media (31.8%). The mean age of the respondents was 27.8 years. Most respondents (76.4%) were living in rural

areas. Slightly more than half of the respondents (58.2%) had primary education. Experience of violence against women remains relatively high, with slightly more than half (55.2%) reporting to have experienced emotional violence, 43.9% having experienced physical violence and about nearly four in ten (38.6%) reporting to have experienced sexual violence. About two-thirds (67.9%) experienced any form of violence. Results showed higher odds of reporting disruption of work or income-generating activities among respondents who experienced emotional violence (OR=2.001; CI=1.155-3.467) compared to those who did not experience emotional violence.

Conclusion

The results in this paper highlight the need to recognise potential social and gender norms that regulate relationships between men and women, because when women are exposed to violence and are engaging in income generating activities, it maximises both productivity and effective benefits from the paid work. This further underscores the need for systematic efforts geared towards developing a gender transformative intervention to integrate into the planning and implementation of income generating activities as a tool to enhance the motivation and incentives of women to effectively participate and maximise gains from economic activities.

SDG 8
Decent Work and Economic Growth

SDG 8 involves promoting policies for economic productivity, job creation, and innovation, while also ensuring safe and fair working conditions, a living wage, professional development, and the elimination of child labour and human trafficking. The key aspects of this goal mainly includes the following: i) promoting growth that is not only sustained but also inclusive of all people and sustainable for the planet; ii) ensuring that everyone has the opportunity to work in jobs that are both productive and offer well-paid, quality roles; iii) ensuring fair working conditions, fair wages, and a living wage, along with professional development opportunities for workers; iv) fostering creativity, innovation, and entrepreneurship to create new jobs and support diverse economies; v) addressing the challenge of youth not in employment, education, or training (NEET), which hinders their ability to gain necessary skills for the labour market; vi) improving labour protections and secure the financial systems and development assistance for developing countries to support these efforts; as well as vii) ensuring economic growth initiatives, including sustainable tourism, are a part of the strategy for achieving the broader goals.

This section, therefore, presents the following papers:

1. **Tax Payer's Attitude and Tax Compliance: A Developing Country Perspective.** *Hellen Nambi*
2. **Formalisation of Small and Medium Size Enterprises (SMEs): A Cultural Tenacity to their Innovation in Uganda.** *Ismail Kintu and Calorine Twongirwe*
3. **Informal Sector Tax Compliance and Citizens' Welfare in Uganda: The Mediating Effect of Government Expenditure.** *Kintu Hussein*

Tax Payer's Attitude and Tax Compliance: A Developing Country Perspective

Hellen Nambi

Introduction

Taxation is a critical tool for financing public goods and services, promoting economic stability, and fostering development. Beyond administrative and legal enforcement, research increasingly shows that taxpayer attitudes and perceptions play a significant role in shaping compliance behaviour. Theory of Reasoned Action (TRA) and psychological models suggest that taxpayers' behavioural beliefs and perceived fairness of the tax system influence their intention and willingness to comply with tax obligations.

In Uganda, fiscal decentralisation reforms introduced the Local Service Tax (LST) and Local Government Hotel Tax (LGHT) to enhance local revenue generation. However, in Gulu District, compliance among hotels remains low (URA, 2018). Although 55 hotels were registered in the tax system by 2018, only 30% submitted monthly returns consistently (URA, 2018). Gulu Local Government reported a compliance rate of 33% for LST and between 10%– 30% for LGHT, collecting only 37% of the projected UGX 10.4 million from hotel tax in FY 2017/2018 (Gulu district local government report, 2018). While most studies on tax compliance in Uganda emphasise administrative factors such as enforcement and policy frameworks, behavioural and psychological dimensions have been understudied, particularly in the hospitality sector where informality is common.

The paper enquires into how taxpayers' attitudes affect tax compliance among hotels in Gulu District, Uganda? Specifically, it assesses the effect of behavioural beliefs on tax compliance among hotels. It also examines the influence of perceived fairness of the tax system on tax compliance.

Methods

The study employed a descriptive, quantitative, cross-sectional research design, guided by Theory of Reasoned Action and psychological perspectives on tax behaviour. The target population comprised 55 hotels registered for local government hotel tax in Gulu District. Using simple random sampling, 48 hotels were selected, and data were collected from 96 respondents, including hotel managers and accountants. Data were analysed using descriptive statistics to summarise patterns and inferential methods including correlation and multiple regression analyses to test the hypothesised relationships between taxpayers' attitudes and tax compliance.

Findings

Behavioural beliefs and perceived fairness of the tax system were both positively associated with tax compliance.

Perceived fairness had a stronger and near-significant influence ($\beta = 0.481$, $p = 0.053$) on compliance than behavioural beliefs ($\beta = 0.365$, $p = 0.111$). These findings reinforce that tax compliance is not only a function of deterrence but also of trust, perceptions of fairness, and attitudinal orientation.

Conclusion

This study demonstrates that taxpayer attitudes and perceptions are critical determinants of tax compliance, particularly in contexts with limited enforcement capacity. Perceived fairness of the tax system exerts a stronger influence on compliance behaviour than behavioural beliefs alone. For Uganda's local governments to maximise revenue mobilisation, reforms must go beyond administrative enforcement to include behavioural interventions that foster trust, fairness, and positive taxpayer attitudes.

Formalisation of Small and Medium Size Enterprises (SMEs): A Cultural Tenacity to their Innovation in Uganda

Ismail Kintu and Calorine Twongirwe

Introduction

Uganda's economy is largely supported by Small and Medium Enterprises (SMEs), which contribute approximately 20 percent of the Gross Domestic Product and 90 percent of private sector activity (Ministry of Trade, Industry and Cooperatives, 2024). However, the SME sector is characterised by high informality; 61 percent of SMEs are unregistered, implying that only 39 percent operate formally (Ministry of Trade, Industry and Cooperatives, 2024). This reflects a weak formalisation culture, often attributed to high registration costs, lengthy registration processes, and fear of tax obligations.

Given the economic significance of SMEs and the low rate of formalisation, this study seeks to determine whether registration with recognised regulatory authorities enhances SME innovativeness, measured through investment in technology, exports, marketing, new product development, and geographical expansion. By comparing innovation outcomes between formalised and informal SMEs, the study contributes to the literature on entrepreneurship and formalisation culture. Its novelty lies in simultaneously examining registration with major regulatory bodies, namely: the Uganda Revenue Authority (URA), Uganda Registration Services Bureau (URSB), Uganda National Bureau of Standards (UNBS), and Local Governments (LG). While discussing formalisation, we are cognisant of the fact that Ugandan firms don't stop at initial registration; they endure annual license renewal with the different regulatory bodies.

The study aims to determine whether SME registration with different regulatory bodies influences innovation in Uganda.

Methods

The study employed a quantitative approach with a maximum sample of 1137 SMEs. A probit hierarchical regression model was employed for analysis, with correlation used to determine the association between variables.

Findings

The study findings show that registration with URSB significantly influences firm technology ($P<0.05$, $\beta=0.116$), new product innovation ($P<0.01$, $\beta=0.130$), and geographical expansion ($P<0.05$, $\beta=0.142$). Registration with UNBS significantly influences technological innovation ($P<0.01$, $\beta=0.138$). Surprisingly, registration with the local government insignificantly influences all innovation measures.

Sector-wise, registration with URSB and UNBS is the only significant influencer of technology innovations in the agriculture sector. However, registration with different authorities in other sectors is insignificant. We notice that no form of registration influences new product innovations in the agriculture sector. Registration with URSB is noted to be the only form of formalisation that influences new product innovation. In the service sector, registration with URSB, URA, and UNBS significantly influences new product innovation.

Conclusion

The study established that registration with URSB and UNBS significantly influences technological innovation in Ugandan firms. Additionally, registration with URSB and URA has a significant impact on new product innovation in Ugandan firms. Surprisingly, registration with local governments does not significantly influence any form of innovation in Ugandan firms.

Sector-wise, registration of firms in the agriculture and service sectors shows a more significant influence on innovation in the form of technology, new products, and geographical expansion compared to the manufacturing sector. This renders the Ugandan manufacturing sector lagging in terms of innovation and highlights the need for programs and policy initiatives to stimulate it.

Informal Sector Tax Compliance and Citizens' Welfare in Uganda: The Mediating Effect of Government Expenditure

Kintu Hussein

Introduction

This study examines the relationship between informal sector tax compliance and citizens' welfare in Uganda, with government expenditure investigated as a mediating variable. The aim is to provide empirical insights into how informal tax behaviour influences public welfare outcomes in a developing country context. Therefore, the study addresses the following research questions:

RQ1. Does Informal sector tax compliance influence citizens' welfare in Uganda?

RQ2. Does government expenditure mediate the relationship between Informal sector tax compliance and citizens' welfare in Uganda?

Methods

Using primary data from the 8th round Afrobarometer survey (2019) on democracy and governance in Uganda, the study employs a quantitative cross-sectional research design. The study sample comprised 1,200 Ugandan citizens aged 18 and above, selected through a nationally representative, random, stratified, multi-stage probability sampling framework based on UBOS census projections (2019). Correlation, multiple regression, and Baron and Kenny's mediation analysis were applied to test the hypotheses. The study was explanatory in nature; it attempted to analyse the correlation relationship between informal sector tax compliance, government expenditure and citizens' welfare in Uganda. The sample design was nationally representative, random, clustered, stratified, multi-stage area probability stratified basing on 11 regions and urban-rural location. The paper assessed the relationship between tax compliance, government expenditure and welfare indicators using Pearson or Spearman rank correlation. Multiple regression analysis to assess the direct and indirect effects of tax compliance on citizens' welfare through government expenditure.

Findings

A Pearson correlation analysis revealed a positive and statistically significant relationship between informal sector tax compliance and citizens' welfare ($r = .123$, $p < .01$). This indicates that higher levels of tax compliance within the informal sector are associated with increased welfare among citizens in Uganda. Although the correlation coefficient is relatively low, the statistical significance suggests that even small improvements in informal sector tax compliance may contribute to better welfare outcomes, potentially through improved public service delivery or enhanced fiscal capacity. The correlation between government expenditure and

citizens' welfare was also found to be positive and statistically significant ($r = .047$, $p < .01$). This suggests that increased government spending is associated with slight improvements in citizens' welfare. While the strength of this relationship is weak, the statistical significance implies that public expenditure plays a measurable role in shaping welfare outcomes, supporting its hypothesised mediating role in the relationship between informal sector tax compliance and citizens' welfare.

The regression results align with the correlation findings, where both predictors showed positive associations with citizens' welfare. The significance of both predictors in the regression model suggests that government expenditure partially mediates the relationship between informal sector tax compliance and citizens' welfare. This implies that while tax compliance directly contributes to improved welfare, part of its effect operates indirectly through increased public spending as explained below. However, the modest adjusted R^2 indicates that additional factors beyond these variables also contribute to welfare outcomes, warranting further investigation.

Conclusion

From a policy perspective, the results have several important practical implications for Uganda and other developing countries with large informal sectors.

The significant positive relationship between informal sector tax compliance and citizens' welfare implies that efforts to improve compliance through simplified tax systems, awareness campaigns, and improved taxpayer services can yield developmental benefits. These measures should not aim solely at revenue collection but also at enhancing the perceived legitimacy and inclusiveness of the fiscal system.

The mediating role of government expenditure suggests that how tax revenues are spent is as important as how they are collected. For tax compliance to translate into improved welfare, public spending must be directed toward visible and impactful sectors such as health, education, water, sanitation, and infrastructure. Poor expenditure efficiency or corruption could weaken the potential developmental returns of tax revenue.

The study supports the notion that citizens are more willing to comply with taxes when they perceive a tangible return in the form of public goods and services, a key element in the fiscal social contract. Thus, fiscal transparency, participatory budgeting, and accountability mechanisms are essential to reinforce this relationship and sustain compliance.

Rather than coercively formalising informal businesses, governments should pursue inclusive tax frameworks that are proportionate, context-sensitive, and aligned with service delivery. The findings indicate that even partial compliance in the informal sector can contribute to broader welfare outcomes when coupled with strategic public investment.

The Contribution of Social Media Competencies and Privacy in Catalysing the Sustainable Performance of Small and Medium Enterprises (SMEs) in Uganda

Sendawula Kasimu

Introduction

The purpose of this study is to establish whether social media competencies and privacy matter for sustainable performance of Small and Medium Enterprises (SMEs). This aim was achieved using a correlational design where a mixed-methods approach was employed to comprehensively understand the study phenomenon. Data were gathered from 245 small and medium enterprises under the Uganda Manufacturers Association (UMA) operating in the central region of Uganda using a self-administered questionnaire, and a semi-structured interview guide, on the other hand, was used to gather views from UMA coordinators and administrators. Statistical Package for Social Sciences (SPSS) and Atlas.ti supported data analysis.

Fingings

Study results indicated that both social media competencies and privacy matter for sustainable performance of SMEs in Uganda. However, social media privacy matters more as compared to social media competencies. Based on the study results, government ministries, departments and agencies such as the National Information Technology Authority (NITA) – Uganda should develop, publish and promote social media privacy guidelines that are aimed at increasing social media safety and security. This will enable the SME fraternity to develop more trust in social media platforms, pages and channels for increased sustainable performance among SMEs in Uganda.

Conclusion

For private organisations such as the Uganda Manufacturers' Association (UMA) and the Uganda Small Scale Industries Association (USSIA), they should invest in the SME fraternity by providing entrepreneurs with training opportunities to unlock their social media soft and technical skills needed to fully integrate social media into the operations of the SMEs for sustainable performance in Uganda.

For the SME owner-managers, they should acquire and update their social media competencies, properly manage business information posted on their social media platforms by allowing customers to only have access to the public information posted, and develop a control policy that is verified/monitored by a reputable third party for protecting customers' personal information and operating verified social media platforms. This will help the SME fraternity maintain privacy on their social media platforms, which will lead to improved sustainable performance.

Investor Attention to the Environment and Firm Performance

Tadeo Masimengo

Background

In this paper, we intend to establish the capacity of investor attention to the environment to predict firm/or stock performance. The lack of substantial finance literature addressing investor attention to environmental issues has led us to develop the Environmental Search Volume Index (ESVI), derived from Google search queries, and to investigate its potential in predicting firm performance. Our study, therefore, contributes to the behavioural finance literature by incorporating the environment into GSV to proxy for "investor attention to the environment", and then applying it to the prediction of firm performance. While many extant papers utilising internet search-based measures of either attention, recognition, or sentiments indicate that GSV's prediction ability is only temporary, we provide ESVI as a measure that can predict both short-term and long-term firm/or stock performance.

Methods

We use "Environmental Search Volume Index" to proxy for investor attention to environmental issues, the main independent variable, and data on firm performance; which includes Return on Assets, Return on Equity, Trading Volume, and Dividend Yield. We also use data on firm specific characteristics and appropriate economic data for the 51 US States, building up the control variables. We set and ran quarterly predictive panel Ordinary Least Square (OLS) regressions for all the sample firms, and present the results therefrom in the proceeding section. Before running any regressions, we merge three different databases, that is, financial accounting database (COMPUSTAT) to stock database (CRSP) and then to the hand-picked database of state level variables from various US-websites.

We clean the panel dataset ensuring that we sequester out firms and firm-quarter observations with insufficient (or missing) data from our empirical analysis. To mitigate the outlier effect, we winsorize all our variables taking cuts at [1 99]. The empirical analysis in this study is considerate of both time (quarter) and state fixed effects. Moreover, the -statistics associated with the standard errors are robust to heteroskedasticity and double-clustered by firm (ECUSIP) and time (quarter). All the independent variables essential to the empirical analysis are taken at quarter while each of the dependent variables run from quarter to quarter and then quarters and .

Findings

Our findings indicate that the ESVI is capable of forecasting both short- and long-term metrics, including return on assets, return on equity, trading volume, and dividend yield. When considered in isolation, the ESVI suggests that return volatility tends to rise with increased investor focus on environmental matters. However, when combined with sentiment analysis, it predicts a decrease in return volatility. Individually, ESVI has the ability to foretell low future trading volume of common stock, and low quarter one stock prices. The study further provides a new addition to Google based sentiment literature in finance by incorporation "investor attention to the environment", measured by ESVI that has power to predict firm/or stock performance. The empirical tests taken in this paper and the results obtained thereof can be used by the International Environmental Agencies (IEA), the Intergovernmental Panel on Climate Change (IPCC), Parties to the UN Framework Convention on Climate Change (UNFCCC), and National Governments as the basis for demanding more commitments and financing of clean environmental technologies from all governments world over, large corporations, and households.

Conclusion

In conclusion, we are confident that these results are representative of the global investors' attention to the environment for the United States has always set the pace for the rest of the world. Secondly, the degree of use and accessibility to the internet (Google) is much higher than in any other country. Finally, the composition of the US gives this study 51 different geographical States, almost same number as there is in the whole of Africa, more than the 44 countries in Europe, and the 48 countries in Asia.

Credit Sources and Factors Influencing Credit Access of Households in Uganda

Mwebaze Thomas

Introduction

There has recently been an upsurge of interest among development economists, governments, and international donors to increase financial resources in developing countries (DCs), particularly in rural areas and from non-wealthy households. This is because financial resources play a key role in eradicating household poverty given that it's the surest way of increasing household income particularly when this money is invested.

Improving access of resource-poor people to appropriate financial services has been increasingly recognised as one means of breaking the vicious circle of poverty they are trapped in. Access to adequate and timely credit to SMEs has been identified as a key element for success and sustainable contribution to descent employment, food security and increased investment in the sector. Apart from its critical role in improving production and productivity, credit can also enable smallholders' access better market opportunities, generate better income and improve their livelihoods.

There has generally been limited access to credit especially rural households in Uganda despite the various sources in place especially with the efforts by the government. The Uganda Agricultural Census Survey (2014/2015) revealed that at national level, only 11.3% of the 3.9 million agricultural households in Uganda access credit. Of these, 61% access the credit informally, 29% through semi-informal and 10% through formal financial institutions. Households' access to credit has been so low in Uganda, despite the various sources available plus programs specially by government, which affects their welfare. The general perception has been that this is due to their lack of collateral/ security.

This study seeks to investigate the various sources of credit and factors influencing access to credit from these sources by households in Uganda.

Methods

Sources of credit and factors influencing access to credit are investigated using household data collected by FINSCOPE 2023. The study employs a binomial probit model.

Findings

The descriptive statistics shows that 40.9% of the household in the survey got credit in that year and 53.2% were female. Majority of the households fall in the 25-40

age bracket, with the average age of 37.2 years, and 67.4% were married. Sixty one percent did not go beyond P7, and 74.1% were self-employed. 13% of adults have access to formal services, while 52% of the population, utilise informal financial services. Thus, the study shows the big role played by the informal financial institutions, with the majority of the households (59.1%) accessing credit from group/VSLA. Quickest access to the source was given as the major reason why they borrowed from the source, followed by the repayment terms suiting them, and then proximity-convenient access in addition to cost of the loan.

It is also interesting to note that there are few loans obtained from money lenders who are dominant lenders elsewhere such as India. In terms of use for the loan, 44.7 % of the households indicated that they used the credit to cater for regular expenses, such as education and related expenses. Results showed that majority of the respondents (75.5%) borrowed less than UGX 500,000, and 41.4% borrowed less than UGX 150,000. A very small percentage of the respondents (2.6%) borrowed above 5 million shillings. This reveals high small-scale entrepreneur's credit demand and a very low large scale entrepreneur's credit demand.

For the regression analysis, the results of the probit regression model reveals that self-employment in production or service, unpaid employment in the private sector, working with NPISH, have a positive significant effect on households' decision to use credit. In contrast, households' age, marital status (single, and widow), and membership to farmers' association had a negative significant effect.

Conclusion

The results showed in this study revealed that demand for credit is strongly influenced by gender, age, relatives/friends, education, and location. Households should be encouraged to seek credit facilities from both credit sources (formal and informal) for growth and development of their business.

Internal Control Systems and Value for money. Evidence from West Nile Districts' Local Governments

Sophia Nalunkuuma

Introduction

Efficient and effective utilisation of public resources is a cornerstone of sustainable development and improved service delivery in the public sector and as such, ensuring value for money defined as the optimal use of resources to achieve intended outcomes of economy, efficiency, and effectiveness (Barnett, 2010) has become an imperative in public financial management.

The Government of Uganda, through various reforms such as the Local Government Financial and Accounting Regulations 2007, the introduction of the Integrated Financial Management System and the development of the Local Government Internal Audit Manual (LGIAM), has sought to enhance accountability, transparency, and control mechanisms in LGs (Ministry of Local Government, 2014). Despite these reforms, persistent inefficiencies in public procurement, project execution, and financial accountability remain widespread.

This study investigates the relationship between the internal control system and value for money in WestNile local governments in Uganda.

Methods

This study employed a cross-sectional design because data was collected only once. This design ensures that a broad snapshot is captured to make inferences about the population's interests that researchers need to investigate. Simple random sampling was applied to pick local governments in WestNile region districts of Uganda, namely Arua, Koboko and Nebbi. For each local government, the administrative heads of LGs, accountants and community development officers were targeted as a unit of inquiry. Therefore, the target population was the total number of local governments from the WestNile region, which was 52. The Krejcie & Morgan (1970) sample table formula for calculating a sample size was applied and resulted in a sample size of 49 local governments. However, the study obtained only 36 responses from the surveyed local governments that were included in the final analysis. This equates to a response rate of 73.5%.

Findings

Control Environment was not a significant predictor of value for money, $\beta = .063$, $t = 0.703$, $p = .484$. This suggests that, holding other variables constant, changes in the control environment do not significantly influence value for money in the studied institutions. Control Activities also did not significantly predict value for

money, $\beta = -.128$, $t = -1.359$, $p = .177$. Interestingly, the coefficient was negative, indicating a potential inverse relationship, although not statistically significant. Risk Assessment had no significant predictive power on value for money, $\beta = .017$, $t = 0.183$, $p = .855$. This implies that risk assessment, when considered alongside the other internal control components, does not independently contribute to the prediction of value for money. Information and Communication emerged as the strongest predictor in the model, with a significant positive effect on value for money, $\beta = .427$, $t = 4.392$, $p < .001$. This indicates that better communication and information systems within institutions are strongly associated with improved value for money outcomes. Monitoring also significantly predicted value for money, $\beta = .267$, $t = 2.647$, $p = .009$. This finding suggests that effective monitoring mechanisms contribute significantly to efficient resource use and service delivery.

Conclusion

This study set out to examine the relationship between internal control system components namely control environment, control activities, risk assessment, information and communication, and monitoring and value for money in local governments within the West Nile region of Uganda. The findings revealed that information and communication and monitoring are the most significant predictors of value for money. These components not only demonstrated strong positive correlations with value for money but also remained statistically significant in the multiple regression model.

Financial Accountability and Value for Money: Evidence from West Nile Region Local Governments

John Ogema

Introduction

Public financial accountability is a cornerstone of effective governance and service delivery (Loozekoot and Dijkstra, 2017). In Uganda, particularly in the West Nile region, persistent audit queries, incomplete projects, overpayments, and misuse of funds have raised critical concerns about the ability of local governments to deliver value for money (VFM) (Auditor General Reports, 2013-2024). VFM refers to the economical, efficient, and effective use of public resources to achieve desired outcomes (McKevitt, 2015).

Existing literature emphasises that strong financial accountability mechanisms such as financial reporting, compliance with regulations, and disclosure are essential for reducing wastage, enhancing transparency, and improving service delivery (Aguolu, 2012; Benjamin, 2008; Juardi et al., 2018). Under Agency Theory, public managers (agents) are entrusted to manage resources on behalf of citizens (principals) (Jensen and Meckling, 1976). Mechanisms like reporting, compliance, and disclosure reduce information asymmetry and align agent behavior with public interest (Jensen and Meckling, 1976). In Uganda, several accountability reforms have been introduced, including Local Government Financial and Accounting Regulations (2007), Integrated Financial Management System, and internal audit manuals (Ministry of Local Government, 2014). However, audit reports and budget monitoring reports reveal systemic weaknesses in financial accountability at the local government level, especially in West Nile. Cases in Arua, Koboko, and Nebbi districts show incomplete or abandoned projects and misuse of funds (Annual Budget Monitoring Reports, 2013-2024).

Despite policy reforms, local governments still fail to achieve VFM due to weak financial accountability systems. For instance, in Arua District, internal audit reports revealed that 92% of inspected construction sites were incomplete or abandoned, and several projects under the School Facility Grants (SFGs) were either terminated or not started. This undermines service delivery, erodes public trust, and leads to resource wastage.

This paper, therefore, investigated the influence of financial accountability on value for money in West Nile region local governments in Uganda?

Methods

The study adopted a quantitative, cross-sectional research design. The population consisted of 52 local governments in the West Nile region. A sample of 49 local

governments was selected using Krejcie and Morgan sample size determination table. Data collection was conducted using structured questionnaires administered to heads of local governments, accountants, and community development officers. Descriptive and inferential statistics were used to analyse the data and test the hypotheses regarding the relationship between financial accountability and VFM.

Findings

- There is a positive and statistically significant relationship between financial reporting, compliance, and disclosure and the realisation of VFM.

- Strong financial accountability practices were linked to higher project completion rates, reduced resource wastage, and improved quality of public services.

These findings confirm the relevance of Agency Theory in understanding accountability challenges and support the role of financial accountability as a driver of public sector performance.

Conclusion

This study confirms that financial accountability is a critical determinant to achieving value for money in local governments. Financial reporting, compliance, and disclosure mechanisms collectively enhance economy, efficiency, and effectiveness in the use of public resources. The findings provide empirical evidence for policy and practice, reinforcing the need to institutionalise robust accountability mechanisms at the local government level.

Enhancing Tourism Development through Public-Private Partnerships in Uganda: An Operating Environment Factor Analysis

Jude Thaddeo Mugarura

Introduction

The Republic of Uganda ranks as the fourth top most tourist destination on the African continent, and is among the few countries in the world with extraordinary tourist attractions. Tourism is a key sector in Uganda's economic development, significantly contributing to gross domestic product (GDP), foreign exchange earnings, and job creation. In 2024 the sector contributed, 17.2% to the total national investments, 7.2% jobs to the total national employment, and 3.2 % to the national GDP. However, challenges such as, infrastructure gaps, limited marketing, and insufficient community involvement, hinder its growth. Governments are encouraged to explore new ways of procuring and financing tourism projects and improving services for socio-economic development. PPPs are a promising solution that combines public resources with the private sector's efficiency and innovation to overcome these barriers.

Methods

The study utilises an exploratory design and a qualitative approach using semi-structured interviews to collect and analyse data to understand the PPP operating environment in Uganda's Tourism sector. Through this, the study was able to directly capture the participants' personal feelings, thoughts, examples and experiences about the factors that influence the PPP operating environment, which definitely enriched the research outcome.

Although, purely exploratory qualitative studies are criticised for being less mathematically precise and for producing findings that are not generalisable in nature, given that we were dealing with an under-studied research area, exploratory qualitative design became the best option to address this problem. Semi-structured interviews were used, and they were found appropriate for the study because it provided a lot of flexibility to the researchers to frame new questions for further interrogation, depending on how the interview discussions unfolded. This allowed researchers to explore new dimensions of issues under study that were not anticipated prior to the conducting of the research.

The study focused on PPP arrangements in and around national Parks in fostering sustainable and more impactful tourism in Uganda. National parks were picked because a number of activities that take place in and around National parks are largely a replica of what happens in other areas of tourism. Three National Parks of

Bwindi Impenetrable, Kidepo Valley and Mt. Elgon were used as a representative of the national parks in the country with the view of taking care of the regional balance factor and the differing tourist attractions/adventures across the country.

The study targeted 50 participants who had worked with PPP projects, however only 17 participants were interviewed given that at the 17th participant no new insights were being observed. This is in agreement with Patton (2002) who recommends that a sample size of between five and 50 having attained the saturation point is good enough for a qualitative study. Out of the 17 participants, seven were from the public sector, seven from the private sector, and three from community leadership.

Only participants with prior experience in PPPs were chosen, with the key criterion being their involvement as either a private or a public partner in PPP tourism projects. Interviews were conducted at the participants' workplaces or their identified places of convenience with prior consent for recording to ensure high participation rate and data accuracy.

Interview voices from the 17 participants were first transcribed verbatim into written word texts, and were used alongside the field notes for data analysis. The data sets were subjected to inductive qualitative content analysis (IQCA) using Microsoft word processor through an iterative and cyclical computer-based coding system. IQCA was used, because it allowed new insights about factors that influence the PPP operating environment of the tourism sector to emerge directly from the study participants/raw data rather than having to rely on preconceived categories or imposed theoretical perspectives that would produce biased results. As such, the IQCA technique became handy in understanding, interpreting and presenting subjective data in a more scientific and scholarly way.

The analysis of the data for this study started with the preparation phase transitioning to the data organising phase, and ended with results reporting. After attaining a bigger picture meaning and understanding of the data set, organising of the data was embarked on, and this involved a repetitive and systematic process of open coding, categorising and abstraction. This subsequently led us to the reporting of the results, where findings were presented in summarised word texts, direct quotations from participants, and figures.

Findings

Findings reveal that the operating environment for PPPs in Uganda's tourism sector is mainly influenced by the government commitment and support, political stability, public sector capacity, good governance, economic growth and stability, financial access, public infrastructure needs, sound legal and policy framework, institutional systems, citizen perception and support, stakeholder engagement, private sector capacity and employee skills, and natural resources potential.

Conclusion

The government should put in place a conducive environment and implement favourable policies that can attract private sector investments to ensure project continuity. It should address challenges, such as, bureaucratic inefficiencies, political interference and economic instabilities, land acquisition and property compensation issues, and regulatory uncertainties, which predominantly hinder tourism growth and PPP success. Continuous reforms and strong governance are necessary to overcome such obstacles. These measures alongside targeted tourism marketing initiatives, will help create a favourable environment for PPP projects, attract private investment, and drive tourism growth. As such, policymakers should prioritise comprehensive support systems for PPPs by ensuring political commitment, legal clarity, and macroeconomic stability.

Business Incubation Model and the Success of Start-Ups in Uganda: A Case of Greater Kampala Metropolitan Area

Geoffrey Nuwagaba

Introduction

Start-up enterprises play a pivotal role in driving innovation, creating employment opportunities, and fostering economic development globally. However, their success rates remain disproportionately low, particularly in developing regions such as Sub-Saharan Africa. This study investigates the impact of core business incubation components, namely business management training, funding support, and networking facilitation, on the success of start-ups within the Greater Kampala Metropolitan Area.

Grounded in the resource-based view and entrepreneurial ecosystem theory, this research addresses an empirical gap regarding the translation of incubation resources into measurable success indicators, including customer satisfaction, profitability, and sustainability. Employing a cross-sectional descriptive survey design, data were collected from 185 start-ups that graduated from 18 incubators between 2020 and 2024 through proportionate stratified random sampling. Quantitative analyses, comprising descriptive statistics, regression, and ANOVA, tested hypothesised relationships between incubation interventions and start-up success.

Findings

The results indicate that incubators effectively provide training in financial management and marketing, conventional funding guidance, and networking for resource linkage. However, notable deficiencies exist in innovation training, access to venture capital, and operational networking. Regression analyses revealed that business management training significantly predicts start-up success, accounting for 50.3% of the variance (Adjusted $R^2 = 0.503$, $p < 0.001$, $\beta = 0.450$). Funding support explained 47.5% of the variance (Adjusted $R^2 = 0.475$, $p < 0.001$, $\beta = 0.315$), and networking accounted for 49.1% (Adjusted $R^2 = 0.491$, $p < 0.001$, $\beta = 0.446$). A multiple regression model integrating all three strategies explained 64.2% of the variance in start-up success (Adjusted $R^2 = 0.642$, $p < 0.001$), confirming the synergistic impact of comprehensive incubation services.

The findings emphasise that skill development and networking constitute primary determinants of entrepreneurial performance, with funding serving a necessary yet comparatively subordinate role. This study advocates for the enhancement of holistic incubation frameworks that cohesively integrate management training, financial support, and networking facilitation to catalyse sustainable start-up

growth within the Greater Kampala Metropolitan Area.

The study's results are consistent with extant literature, which emphasises the critical role of business incubation strategies in enhancing start-up survival and success. The findings suggest that business incubation programs should prioritise robust business management training, ensure accessible and timely funding support, and facilitate networking platforms to foster peer learning and collaboration. Policy makers and stakeholders should promote integrated incubation frameworks that address skill development, financial access, and networking to create a supportive ecosystem for start-ups.

The implications of this study are multifaceted. Firstly, the findings underscore the importance of business incubation strategies in enhancing start-up success, particularly in developing countries where entrepreneurial ecosystems are still evolving. Secondly, the study highlights the need for a comprehensive approach to supporting entrepreneurial ventures, one that combines business management training, funding support, and networking opportunities. By adopting such an approach, business incubation programs can increase the chances of success for start-ups, ultimately contributing to economic growth and development.

Conclusion

In conclusion, this study contributes to the growing body of research on business incubation and start-up success, highlighting the importance of a comprehensive approach to supporting entrepreneurial ventures in developing countries. The findings have significant implications for policy makers, incubation program managers, and entrepreneurs seeking to enhance start-up success rates in Uganda and beyond. By prioritising business management training, funding support, and networking opportunities, business incubation programs can play a critical role in fostering entrepreneurial success and driving economic growth.

The Moderating Role of Firm Size in the Relationship Between Perceived Cost-Saving Benefits and the Adoption of International Financial Reporting Standards for Small and Medium-Sized Entities in Developing Countries: Evidence from Uganda

Sylivia Namujjuzi

Introduction

The International Financial Reporting Standards for Small and Medium-sized Enterprises (IFRS for SMEs) was introduced in Uganda in 2009 with the expectation that it would improve the quality, consistency, and comparability of financial reporting among SMEs. However, sixteen years later, full compliance remains limited. Ugandan SMEs continue to produce financial reports that are often incomplete, inconsistent, and untimely, reflecting a low level of adoption.

According to the Institute of Certified Public Accountants of Uganda, only 35% of SMEs have adopted IFRS for SMEs well below anticipated levels. Similar studies in Kampala and Mbarara reveal adoption rates of 35% (full), 54% (partial), and 11% (non-adoption), with an overall disclosure index of 76%, indicating incomplete compliance. These statistics highlight a persistent gap between policy intent and actual implementation, which undermines the quality of SME financial reporting and, consequently, their access to formal finance and growth opportunities.

Previous studies attribute low adoption in developing economies to institutional, cultural, and economic influences such as coercive isomorphism, cultural values, and trading networks. However, little attention has been given to perceptual factors, particularly perceived cost-saving benefits, despite some schoalrs emphasising their importance in adoption decisions. While firm size is known to affect IFRS for SMEs adoption, its moderating role in shaping how SMEs perceive and act on cost-saving benefits remains unexplored.

This study addresses this gap by examining the moderating influence of firm size in the relationship between perceived cost-saving benefits and the adoption of IFRS for SMEs in Uganda. The investigation is grounded in two theoretical frameworks: the economic network theory of Katz and Shapiro (1985), which explains how perceived cost-saving advantages influence SMEs' adoption decisions, and the agency theory of Jensen and Meckling (1976), which clarifies how firm size affects voluntary disclosure behaviour within the context of IFRS for SMEs adoption.

The study enquires into the moderating influence of firm size in the relationship between perceived cost-saving benefits and the adoption of IFRS for SMEs in Uganda?

Methods

This study employed a correlational design and survey strategy to examine the relationship between perceived cost-saving benefits, firm size, and IFRS for SMEs adoption among SMEs in Kawempe Division, Kampala. A structured questionnaire was administered to proprietors, managers, and accountants, targeting a sample of 267 SMEs, with 230 responses received (86.14% response rate). Quota sampling ensured representation across major sectors. Data were analysed using SPSS version 23, with initial checks for data quality via descriptive statistics and graphical techniques. Diagnostics for outliers, linearity, homoscedasticity, and normality were conducted prior to analysis. Objective one was assessed using logistic regression, while objective two employed an Ordinary Least Squares (OLS) hierarchical regression model.

Findings

The study finds the full adoption level of IFRS for SMEs at 36%, partial adoption at 54%, and non-adoption at 10%. The disclosure index is 0.83. This signifies that, on average, the assessed SMEs revealed 83% of the requisite financial information in compliance with IFRS for SMEs. The study finds perceived cost-saving benefits to significantly and positively predict the adoption of IFRS for SMEs in Uganda ($p<0.05$; Exp(B)=0.22). Firm size, equally, significantly and positively moderates the relationship between perceived cost-saving benefits and the adoption of IFRS for SMEs in Uganda ($\beta=0.006$, $p<0.05$).

Conclusion

This study examined the relationship between perceived cost-saving benefits and IFRS for SMEs adoption in Uganda, with firm size as a moderator. Results show that SMEs perceiving economic benefits are more likely to adopt IFRS for SMEs, with larger firms responding more strongly. The findings highlight the role of both perceptual and structural benefits, supporting Economic Network theory and Agency theory, and underscore the need for tailored benefits, and targeted support to enhance compliance, transparency using IFRS for SMEs standards.

Bond Market Development and Government Effectiveness in Africa

Tuhaise Betty Tumuhirwe, Nzibonera Eric, Kiwala Yusuf, Mugarura Jude Thadeo and Onen David

Introduction

Bond markets are essential for mobilising long-term capital for governments and corporations, providing alternatives to traditional lending while promoting fiscal stability and economic growth. In Africa, however, bond market development remains shallow, constrained by weak governance, limited investor education, and regulatory inefficiencies. This study investigates how government effectiveness influences the depth and strength of bond markets across African countries.

Empirical literature has demonstrated that governance quality influences financial market performance, but evidence from Africa remains limited. Several studies emphasise that governance indicators particularly government effectiveness shape investor confidence and debt market stability. Other works examined governance and macroeconomic determinants of bond markets globally but neglected the African context. This study contributes to filling that gap by focusing specifically on how government effectiveness relates to bond market development across African economies.

Despite the increasing recognition of bond markets as vital instruments for financing, most African countries lack strong government systems to support their growth. This weakness limits the capacity to raise domestic capital, manage public debt, and respond to fiscal crises.

This paper examines the relationship between government effectiveness and bond market development. It enquires into whether governance quality enhances bond market performance and proposes policy strategies that strengthen institutional capacity for bond market growth.

Methods

The study adopted a positivist paradigm and quantitative approach, a correlational design and a longitudinal timing horizon using secondary data for 53 African countries between 2013 and 2022. The System Generalised Method of Moments (System GMM) estimator was employed to account for endogeneity, unobserved heterogeneity, and missing data. Bond market development was measured through portfolio investment bonds, and government effectiveness was obtained from the World Governance Indicators dataset.

Findings

Results revealed a strong and statistically significant positive relationship between portfolio investment bond values and government effectiveness, with a coefficient of 13.15 at the 1% significance level. This finding implies that countries with higher government effectiveness exhibit more developed bond markets. The Sargan test confirmed the validity of the model, with no evidence of over-identification. The results are consistent with Wang et al. (2024), who found that effective debt governance reduces credit risk, reinforcing the role of governance as a catalyst for market confidence.

Conclusion

The study concludes that government effectiveness is a fundamental determinant of bond market development in Africa. Strong governance builds investor trust, reduces financial risk, and ensures stable market growth. By prioritising transparency, policy consistency, and regulatory reforms, African nations can harness bond markets as sustainable financing tools for infrastructure and economic resilience.

Financial Literacy, Financial Inclusion and Competitiveness of Small and Medium Enterprises in Kampala Central Business Area: The Mediating Role of Financial Planning

Eric Nzibonera

Introduction

Small and Medium play a significant role in Economic Growth and Development of both developed and developing economies and are critical drivers of most economies through wealth creation and employment generation. Managers of Small and medium enterprises (SMEs) have a vital role they play in improving their competitiveness which lead to job and wealth creation, and resource mobilisation for investment. Because of the role they play, they need to remain competitive through product and process innovations, market share and profitability. To be competitive, SMEs need to carry out clear financial plans on acquisition and use of financial resources. This is enhanced by financial literacy and financial inclusion.

Financial literacy provides knowledge and financial skills necessary for SMEs to access and use financial resources to improve performance. Financial literacy occurs when an individual acquires a set of skills and abilities to be able to utilise existing financial resources. It is also regarded as individuals' ability and skills to understand various aspects of finance such as insurance, debt management, investment and savings. Therefore, SMEs with a strong understanding of financial products and services make informed decisions to improve financial planning which finally leads to business competitiveness. To compete favourably, SMEs also needs to be financially inclusive through access and effective use of financial resources. For SMEs, financial inclusion involves expanding access to banking services which include improving the quality of savings and investments hence enhancing competitiveness. Globally, for SMEs, competitiveness is associated with product innovation and it enables customers to expand market share and improve quality of products and services.

In Uganda, SMEs employ about 45% of the labour force and also contribute over 20% of gross domestic product. However, despite the critical role played by SMEs, it is reported that in Uganda, their competitiveness in terms of sustainable growth, market share and profitability remains a challenge. This study is guided by the following objectives: To establish the relationship between financial literacy and competitiveness of SMEs in Kampala; to establish the relationship between financial inclusion and competitiveness of SMEs in Kampala; to establish the mediation role of financial planning in the relationship between financial literacy and financial inclusion on competitiveness of SMEs in Kampala.

Methods

The study design is correlational using a quantitative approach. The target population include managers of SMEs operating in trade, hotel and restaurants and the manufacturing sector in Kampala Central Business area. According to the Uganda Investment Authority Report (2024), there are about 869,848 registered SMEs in the Kampala Central Business Area. Kampala was selected because it is where most SMEs in Uganda operate from. Based on Kreijce & Morgan's (1970) sample determination, a sample size of 384 respondents (managers of SMEs) was used. Sample selection was carried out using proportionate stratified sampling and simple random sampling technique. Data were collected using a self-administered closed-ended questionnaire designed based on research objectives. Questions were structured using a five point-Likert scale ranging from strongly disagree (1), disagree (2), not sure (3), agree (4) and strongly agree (5).

The dependent variable is competitiveness of SMEs while independent variables were financial literacy and financial inclusion. The mediating variable is financial planning. For the independent variables, the constructs of financial literacy are knowledge and technical skills while constructs of financial inclusion are access and use of financial resources. For financial planning, the constructs are budgeting and investments. The data collection instrument was first tested for reliability and validity through obtaining Cronbach alpha coefficients and content validity index before they were used for data collection. Data analysis was carried out through first coding the responses and then using the STATA software tool for analysis to generate descriptive and inferential statistics.

Findings

Results revealed a full mediation of financial planning in the relationship between financial literacy and competitiveness of SMEs. The effect of financial planning on competitiveness of SMEs in the mediation model is positive and significant (β = 0.440, P = 0.000) but the effect of financial literacy on competitiveness of SMEs is not significant (β = -0. 013, P = 0.840). Before mediation, the effect of financial literacy on competitiveness is positive and significant (β = 0.364, P = 0.000) and the effect of financial literacy on financial planning is positive and significant (β = 0.857, P = 0.000). For financial inclusion, findings revealed that financial planning does not mediate the relationship between financial inclusion and competitiveness of SMEs. The effect of financial inclusion on competitiveness of SMEs in the mediation model is positive and significant (β = 0.079, P = 0.05) but the effect of financial inclusion on financial planning is not significant (β = -0.027, P = 0.551).

Conclusion

Financial literacy has a positive and significant effect on competitiveness of SMEs but this operates through financial planning. Financial knowledge and technical skills aid in making good financial planning in terms of budgeting and investments

which ultimately significantly and positively influence competitiveness of SMEs in terms of market share, product innovation and profitability. Furthermore, financial inclusion has a weak positive and significant effect on competitiveness of SMEs but not through financial planning.

Demographic and Behavioural Drivers of Informal Savings Group Participation: Evidence from Uganda with Broader African Implications

Hellen Namawejje and Bruno L. Yawe

Introduction

In Africa, studies show that VSLAs enhance economic security and social cohesion, particularly among women in Tanzania and Kenya. Similar models such as stokvels in South Africa and community savings groups in Ghana highlight how informal finance adapts to local needs.

Despite these successes, participation levels still differ by income, education, and social networks. The review identifies that few studies focus specifically on Ugandan women, creating a need to explore how demographic and behavioural factors such as age, financial literacy, and peer influence affect VSLA membership. It also links VSLAs to global development frameworks, showing their contribution to the UN Sustainable Development Goals (SDGs) notably SDG 5 (Gender Equality) and SDG 8 (Economic Growth).

The policy problem addressed is the uneven participation of women in VSLAs despite their proven role in advancing financial inclusion and poverty reduction. Many rural Ugandan women remain excluded from formal financial systems, and it's unclear which demographic and behavioural factors most strongly influence their likelihood of joining VSLAs. This knowledge gap limits the ability of policymakers and development organisations to design targeted interventions that effectively expand participation.

Research Questions

The study implicitly and explicitly considered the following research questions: (1) What demographic and behavioural factors influence women's membership in Village Savings and Loan Associations (VSLAs) in rural Uganda?, (2) How do variables such as age, income, financial literacy, social influence, and savings behaviour predict VSLA participation?, (3) To what extent can statistical models (e.g., Firth's logistic regression and Random Forest) accurately predict membership based on these factors?

Methods

The study employed a quantitative research design based on previous works. A multi-stage sampling strategy was used in Luweero District, Uganda. First, one sub-county with a high concentration of women farmers was purposively selected, followed by systematic sampling of 155 women aged 18 years and above, using

Kish's formula. Data were collected through a semi-structured questionnaire using Open Data Kit (ODK) tools, adapted from established financial literacy frameworks. The dependent variable was VSLA membership (1 = member, 0 = non-member). Explanatory variables included age, income, business ownership, financial literacy, saving habits, fear of borrowing, and peer influence.

Findings

High Participation: About 75.5% of respondents were VSLA members, indicating strong engagement among rural women.

Financial Literacy: VSLA members had significantly higher financial literacy scores than non-members (mean = 6.39 vs. 5.74; $p < 0.05$), suggesting that participation improves financial knowledge (Johnson & Nino-Zarazua, 2011; Karlan et al., 2017a).

Significant Predictors: Age -Older women were far more likely to be VSLA members (ages 35–74 showed progressively higher odds; $p < 0.05$).

Income: Women earning UGX 50,000–500,000 per month had 3–6 times higher odds of membership compared to those earning less than UGX 50,000.

Peer Influence: Financial influence from friends significantly increased participation (OR = 4.71; $p = 0.041$).

Regular Savings Contributions: Those contributing regularly were about 6 times more likely to belong to a VSLA ($p = 0.008$).

Model Validation: The AUC = 0.87 confirmed excellent discrimination between members and non-members, while Random Forest analysis ranked age, savings regularity, peer influence, and income as the most influential variables.

Conclusions

The study concludes that age, income, peer influence, and regular saving habits are the strongest predictors of VSLA participation among rural women. The results demonstrate that strengthening financial literacy, promoting peer-based engagement, and designing age-sensitive outreach programs can significantly increase women's involvement in VSLAs thereby contributing to financial inclusion, economic empowerment, and community resilience in Uganda and similar African contexts.

Organisational Compassion and Employee Resilience

Muhwezi Luke

Introduction

This study sought to establish the relationship between organisational compassion as the independent variable and employee resilience as the dependent variable. The study was conducted at the Makerere University main campus in Kampala and Kyambogo University. The study adopted a cross-sectional design which involved a quantitative study approach. Questionnaires were used for data collection. The study population comprised the non-teaching staff of Makerere and Kyambogo Universities. A convenience technique was used to select the targeted 346 sample size. A response of 290 representing 83.8% of the targeted sample size was realised. Statistical analysis was carried out and the results indicated that there was a positive relationship between the variables examined.

Findings

The results indicate that the male respondents and female participants were fairly represented. The male participants, however, formed a slight majority constituting 57.2 % of the participants to this study. This indicates that the study has attempted to gather information from a relatively balanced gender. The results show that organisational compassion promotes employee resilience. When institutional members are supported by their colleagues during challenging times, they easily cope, recover quickly and adapt to the situation. During challenging times, such as loss of a loved one, illness or trouble in marriage, one may not easily handle on their own, and when they get people who understand their situation and give them the support they need, that burden is eased and shared and thus they get back to their former condition easily. When left alone, such a burden would be too heavy for them and they may take long to recover or break down.

Conclusion

Thus, in line with the results of the study, it can be concluded that employee resilience can be enhanced if institutions and members of the organisation adopt a spirit of collectively noticing, feeling and responding to their colleagues' needs. The results also support other previous studies that found similar relationships in other setups. Therefore, this work adds to the existing scholarly work on antecedents of employee resilience.

Does Corruption Matter to Taxpayer Opinions of Tax Fairness? A Discourse with SMEs in Uganda

Festo Nyende Tusubira

Introduction

Tax compliance remains a central concern for national revenue generation and fiscal sustainability. Nations depend on taxpayers' willingness to pay taxes to finance public expenditure; however, widespread non-compliance has resulted in persistent fiscal deficits. Studies emphasise that fairness in tax administration particularly procedural fairness is key to improving compliance (Murphy, 2004). Procedural fairness relates to transparent, consistent, and impartial decision-making processes that foster mutual respect between tax authorities and taxpayers. When taxpayers perceive fairness in the tax system, they are more likely to comply voluntarily, whereas perceptions of unfairness erode trust and increase evasion.

Corruption fundamentally undermines procedural fairness and weakens the legitimacy of tax systems, especially in developing countries. In Uganda, corruption has persisted across successive regimes, from Amin's era of state capture to the entrenched patronage networks of the NRM government. Transparency International's Corruption Perception Index consistently ranks Uganda among the most corrupt nations globally, with scores hovering around 25–27 out of 100 between 2016 and 2021. Such levels of corruption distort the fairness of public resource allocation and erode taxpayers' confidence in the Uganda Revenue Authority (URA).

Theoretical literature distinguishes between distributive fairness, the equitable sharing of tax burdens and benefits, and procedural fairness, which concerns the fairness of tax administration and decision-making. However, most empirical work has focused on distributive fairness in developed economies, leaving significant gaps in understanding how corruption shapes procedural fairness perceptions in developing contexts like Uganda.

This study investigates how corruption influences perceptions of procedural tax fairness among SMEs in Uganda. It enquires into the distinct forms of corruption; petty, petty tax, political, and grand that affect perceptions of tax fairness. It also assesses how these dimensions of corruption interact with taxpayer compliance behaviour and which types of corruption most significantly distort perceptions of fairness in tax administration.

By addressing these questions, this study fills a major empirical gap in African tax research and extends fairness theory by contextualising it within Uganda's corruption landscape. Ultimately, the research aims to inform policy interventions that promote fair, transparent, and corruption-resistant tax systems capable of

enhancing voluntary compliance and strengthening fiscal governance.

Methods

The study adopted a qualitative design to explore how corruption shapes SMEs' perceptions of procedural tax fairness in Uganda. Using purposive sampling, 26 VAT-registered SME owners and managers across Kampala, central, eastern and western regions selected from an initial pool of 60 respondents participated in intensive semi-structured interviews conducted between November 2016 and February 2017. Interviews (10 face-to-face; 16 by telephone) lasted 35–78 minutes; respondents completed a short demographic form and consented to participation. The interview protocol began with a core question on the fairness of Uganda's tax procedures, followed by prompts about corruption and service delivery. Data collection ceased at saturation. To enhance credibility, researchers conducted member checks during interviews and maintained sensitive, non-leading questioning. Audio recording was declined for some face-to-face sessions, so detailed verbatim notes and immediate expansions were used. Transcripts and notes were analysed using thematic analysis to identify recurrent patterns and construct interpretive themes.

Findings

The study reveals that corruption in Uganda's tax environment manifests in four interrelated forms; petty corruption, petty tax corruption, political corruption, and grand corruption, all of which undermine SMEs' perceptions of procedural tax fairness. Petty corruption is reflected in the embezzlement of public funds and poor service delivery, especially in health, education, and infrastructure, eroding trust in government accountability. Petty tax corruption within the Uganda Revenue Authority (URA) involves bribery, favouritism, and exploitative tax practices, where officers collude with firms or demand bribes to influence assessments and audits, creating perceptions of inequality and distrust. Political corruption is marked by selective tax enforcement and protection of politically connected firms, coupled with the promotion of corrupt officials, reinforcing SME beliefs that the tax system is unjust. Grand corruption, including large-scale embezzlement, misuse of classified expenditures, and self-enrichment of political elites, is viewed as the most destructive, draining public resources and diminishing tax morale. Collectively, these forms of corruption have entrenched procedural unfairness, discouraging voluntary tax compliance and undermining the psychological contract between taxpayers and the state.

Conclusions

The study concludes that corruption at multiple levels including bureaucratic, political, and institutional significantly shapes SMEs' perceptions of procedural tax unfairness in Uganda. When taxpayers perceive inequitable treatment, misuse of funds, and political favouritism, their motivation to comply diminishes. Combating corruption is therefore central to restoring procedural fairness and taxpayer trust. Improving governance integrity, enhancing transparency in tax administration, and ensuring accountability in public spending are essential to fostering equitable tax systems and strengthening compliance among SMEs in developing economies.

Working Capital Management and Profitability of Commercial Banks in Uganda

David Namanya

Introduction

Working capital management is a crucial aspect of financial management that entails the strategic administration of a company's short-term assets and liabilities to ensure sustainable cash flows, mitigate risks, and enhance financial performance. In the banking sector, where liquidity management is paramount, effective working capital management is particularly vital due to the inherent nature of banking operations. This study investigates the impact of working capital management policies on the profitability of commercial banks in Uganda, with a specific focus on working capital investment policy.

Extant literature on working capital management presents mixed findings, with some studies reporting a significant positive relationship between working capital management and profitability, while others document a negative or insignificant relationship. The literature suggests that effective working capital management can lead to improved profitability, but the relationship may vary depending on the context, industry, and business cycle.

The study examines the relationship between working capital investment policy and commercial banks' profitability, the relationship between working capital financing policy and commercial banks' profitability, and gives recommendations on effective working capital management policies to enhance profitability. Thus, this study answers the following research questions: What is the relationship between working capital investment policy and commercial banks' profitability? What is the relationship between working capital financing policy and commercial banks' profitability? What recommendations can be made on effective working capital management policies to boost profitability?

Methods

The study employed a quantitative research approach and non-experimental correlational design, with a sample of seven commercial banks in Uganda. Data was collected from annual reports and financial statements of the banks from 2013 to 2023. Descriptive statistics, correlation analysis, and regression analysis were used to examine the relationship between working capital investment policy, working capital financing policy, and profitability.

Findings

The study found that commercial banks in Uganda tend to adopt conservative

working capital investment policies and moderate working capital financing policies. The analysis revealed a significant negative relationship between working capital investment policy and profitability, indicating that more conservative working capital investment policies are associated with lower profitability. Working capital financing policy did not exhibit a statistically significant relationship with profitability. The study also found a strong positive relationship between return on assets and return on equity, indicating that companies efficient in generating returns on assets tend to also generate returns on equity.

Based on the findings, the study recommends that commercial banks in Uganda adopt more aggressive working capital investment policies to enhance profitability. The banks should focus on optimising their working capital management policies to improve financial performance. Additionally, the study suggests that regulatory agencies like the Bank of Uganda should provide guidelines on working capital management policies to ensure that commercial banks adopt best practices.

Conclusion

The study concludes that working capital investment policies have a significant impact on financial performance, while working capital financing policies may not play a significant role. The findings provide insights into the relationships between working capital management policies and financial performance, highlighting the importance of effective working capital management in enhancing financial performance.

Social Enterprises' Feasibility to Market and Spread Advanced Energy-Saving Stoves in Uganda: A Notional Analysis

Mutunzi Ahmed Kitunzi

Introduction

The study investigates the strengths and weaknesses of Savings and Credit Cooperatives (SACCOs) in diffusing advanced energy-saving stoves in Uganda. The research focuses on what is required to diffuse advanced energy-saving stoves, the potential of SACCOs to diffuse advanced energy-saving stoves, and the advantages and downsides of the incumbent business models for selling advanced energy-saving stoves in Uganda. The study design is a desktop, cross-sectional qualitative analysis with a triangulation of evaluative and comparative approaches. The primary source of data for the study is the existing literature on the theory of diffusion of innovation; the attributes of savings and credit cooperatives; and the incumbent business models for selling advanced energy-saving stoves in Uganda.

Findings

The study results highlight the relative potential of Savings and Credit Cooperatives to serve as efficient channels for diffusing advanced energy-saving stoves in Uganda. The postulated SACCO-based model has a relatively great effectiveness for spreading advanced energy-saving stoves in Uganda. The hypothesised SACCO-centered business model befits the diffusion of innovations theory and the recent empirically proven prerequisites for diffusing innovations such as the advanced energy-saving stoves in Uganda. The study has adequately demonstrated that SACCOs can as well be scaled to serve as optimal conduits for diffusing other socio-economically critical innovations, such as medicines and agricultural solutions, in Uganda and the rest of Africa. The significant drawback identified, however, is the failure of the SACCOs to adhere to the principles, values, and guidelines recommended for all cooperatives by the International Cooperative Alliance. The study informs and guides the establishment of appropriate policies and strategies for enhancing the uptake and diffusion of socially crucial innovations such as advanced energy-saving stoves.

Conclusion

Basing on the national and empirical analysis made above, SACCOs have a high feasibility to serve as appropriate channels for diffusing energy-saving stoves in Uganda. The study provides sound premises for further studies related to the dissemination of social-economically vital innovations that improve the

environmental conditions and livelihood of various communities in Uganda. Therefore, interventions by the government and development agencies in the establishment of SACCOs in Uganda have been instrumental but also disruptive and deterrent as far as observing the principles and statements of ICA are concerned.

Extending the Boundary of Marketing Mix Elements in the Business Context: Micro, and Small Enterprise Perspective

Tibaingana Anthony, *Abila Beatrice, Mohammed Guhaish and Jamiah Mayanja*

Introduction

The marketing mix is a set or combination of tactics or factors marketers use to create value and customer satisfaction. Marketers argue that marketing mix elements are critical in creating product awareness and meeting customer's needs. Ipso facto, marketers globally rely on these elements to sell their goods and services and to deliver customer satisfaction. Since their introduction by Culliton in 1948, marketing mix elements have evolved. Many marketers have embraced this mix to sell their goods and services. Proponents of this strategy argue that they enhance a firm's performance. However, the marketing mix has continued to be a preserve of large organisations.

Given the dynamism taking place in the marketing arena, especially in the micro and small enterprise contexts, today, more than ever, marketers believe that the marketing mix offers more pros than cons. However, only a few studies have explored the use of marketing mix elements in micro and small enterprises. This study conducts a systematic literature review and a case study of Wandegeya market cooked food vendors to explore the use of marketing mixes in MSE's. Specifically, it examines what marketing mixes are used by MSME's and how such mixes are ranked according to usage.

Findings

The findings revealed a plethora of new mixes, signalling an extension of the current mix. The findings show the interplay of mixes in stimulating sales, as well as the pertinent mix for micro and small enterprises. This study extends the marketing mix to micro and small enterprises using a qualitative meta-synthesis. This finding contributes to the marketing mix debate, specifically for micro and small enterprises, to enhance marketing strategies and increase sales, taxes, and jobs. It shows that there are many more mixes that have emerged as illustrated in the figure.

Conclusion

Despite their numerical strength in business, micro and small enterprises are wrecked in marketing jeopardy, which constrains their potential. The presence of the marketing mix elements still adds value, and there is a need to embrace the new

mixes that emerge as a result of dynamism in the context. It is a brutal truth that the marketing mix have evolved, making the 7P less useful without considering the new ones that take cognisance of the environment, size of the business and context. We also consider that the marketing mix element has continued to evolve, thereby making it difficult for micro and small enterprises to count and apply. In this study, we were not specific to those factors, but rather to the vendor's ability to know and adapt to a particular marketing mix.

Relative Unit Labour Costs and Export Competitiveness: Evidence from African Manufacturing Firms

Ibrahim Mike Okumu and *Symon Wandiembe*

Introduction

This paper investigates how Relative Unit Labour Costs (RULC) influence the export participation of African manufacturing firms. While most studies on trade competitiveness in Africa rely on macro-level indicators or single-country analyses, this study adopts a cross-country comparative perspective grounded in firm-level micro-data from the World Bank Enterprise Surveys (WBES). It bridges the gap between firm heterogeneity and national export performance by quantifying how labour cost efficiency, rather than wage levels alone, determines the likelihood of exporting.

The analysis is anchored in classical comparative advantage theory (Ricardo, 1817) and new trade theory (Krugman, 1979), which together explain how cost and productivity differentials shape trade patterns. The key insight is that competitiveness depends not on nominal wages but on productivity-adjusted labour costs. RULC—defined as labour cost relative to value added—captures this interaction between wages and productivity, providing a sharper lens through which to understand export behaviour. The paper hypothesises that higher RULC lowers the probability of exporting, as firms facing high labour costs relative to productivity struggle to compete internationally.

Despite two decades of policy reform and trade liberalisation, Africa's share of global manufacturing exports remains marginal. The study contends that this underperformance reflects a productivity problem disguised as a wage problem. While African wages are comparatively low, productivity is even lower, resulting in high unit labour costs. Understanding competitiveness, therefore, requires examining the joint influence of labour costs, productivity, and structural constraints such as finance, infrastructure, and regulation.

Empirically, the paper combines breadth and depth by analysing 5,878 manufacturing firms across 36 African countries between 2010 and 2020. The data cover three sectors central to export-led industrialisation—garments, furniture, and fabricated metal products—allowing for comparison across firm size, age, ownership, and technological intensity. By shifting focus from absolute wages to RULC, the study offers a more nuanced and policy-relevant measure of cost efficiency. Furthermore, by benchmarking African firms against their Chinese and Indian counterparts, it situates Africa within a global context: China representing productivity-driven competitiveness and India exemplifying labour-cost efficiency. This comparison exposes Africa's "dual disadvantage"—high labour costs per unit of output and modest productivity growth—both of which constrain export competitiveness.

Methods

The paper employs a probit model to estimate the probability of export participation. The dependent variable is a binary export indicator, while the main explanatory variable—RULC—is benchmarked against Chinese and Indian manufacturing averages. Controls include firm-specific characteristics (size, ownership, certification, access to finance, and age) and business environment variables (regulatory burden, informal competition, and corruption). Country, sector, and income-level fixed effects account for unobserved heterogeneity.

Potential endogeneity between exports and productivity was examined using sector–size–country averages as instruments. While these instruments did not fully pass exogeneity tests, their inclusion strengthens robustness checks and underscores the paper's transparency regarding methodological limitations.

Findings

The analysis reveals a strong and statistically significant negative relationship between RULC and export participation. A 1% increase in RULC reduces the probability of exporting by about two percentage points, confirming that labour cost efficiency is a critical determinant of competitiveness.

Firm size plays a decisive role: small firms, which dominate Africa's manufacturing landscape, are disproportionately penalised by high unit labour costs and fixed export barriers. They lack economies of scale, advanced technology, and managerial expertise to offset productivity deficits. In contrast, large firms demonstrate greater resilience through access to finance, modern equipment, and superior management practices.

The comparative benchmarking further clarifies Africa's competitive asymmetries. Relative to India, African firms perform poorly in labour-intensive sectors, highlighting India's advantage in cost efficiency. Relative to China, Africa's disadvantage is smaller yet persistent, reflecting China's productivity-driven edge. These results reinforce a broader message from the literature (Gelb, Meyer & Ramachandran, 2013; Decramer et al., 2016): Africa's export challenge is not due to high wages but to low value added per worker.

By connecting firm-level heterogeneity to cross-country patterns, the paper demonstrates that Africa's export underperformance stems from microeconomic inefficiencies within structural constraints—not simply from external trade barriers. It contributes to the empirical understanding of how cost and productivity interact to shape export outcomes in developing economies, situating African firms within the global distribution of competitiveness.

The findings carry strong implications for industrial and trade policy:

Support small firms. Small enterprises bear the highest RULC burden. Policy should reduce fixed export costs—through simplified certification, shared production facilities, and affordable credit—to help them achieve scale and efficiency.

Promote productivity-driven industrialisation. Since productivity gains can neutralise cost disadvantages, governments should prioritise programmes linking firms to research institutions, managerial training, and technology adoption.

Strengthen institutional efficiency. Reducing bureaucratic delays, improving infrastructure reliability, and curbing corruption would directly lower non-wage components of RULC.

Adopt strategic benchmarking. Competing simultaneously with India's labour efficiency and China's productivity dominance requires dual strategies: supporting labour-intensive niches while facilitating technological upgrading.

Conclusions

This study establishes that labour-cost efficiency—not low wages—is central to export-led industrialisation in Africa. Using a unique dataset of nearly 6,000 firms across 36 countries, it provides robust evidence that productivity-adjusted costs, rather than nominal wages, explain export performance. By linking micro-level firm behaviour to macro-structural realities, the paper highlights the centrality of productivity-enhancing reforms in improving Africa's trade competitiveness.

The central message is clear: Africa's export challenge is less about cheap labour and more about productive labour. Strengthening this foundation—through firm upgrading, structural reforms, and institutional credibility—is essential for transforming African manufacturing from domestic survival to sustained global participation.

Exploring the Lived Experiences of Agro-Processing SME Owners in Uganda: Insights into Sustainability and The Role of Policy Regulations

Samuel Kabbera, *Jude Thaddeo Mugarura, Yusuf Kiwala and Anthony Tibaingana*

Introduction

This study examines how policy regulations shape the integration of sustainable practices among agro-processing small and medium enterprises (SMEs) in Uganda's Greater Kampala Metropolitan Area (GKMA). Although Uganda has enacted multiple sustainability policies and strategies including the National Environment Act, the Green Growth Development Strategy, and NDP III & NDP1V, environmental degradation and compliance gaps persist. Agro-processing SMEs, frequently, are cited as notable contributors to environmental degradation. Most policies in Uganda overlook the unique contextual challenges faced by agro-processing SMEs, often focusing on generic policies of one size fits all which have not been helpful. Additionally, SME owners, who play a crucial role in advancing sustainability, have not provided sufficient input in the development of these policies. This study addresses this gap by exploring how integrating SME owners' perspectives can strengthen compliance, build trust, and align policies with the sustainable development of agro-processing SMEs.

The paper addresses the misalignment between policy intent and the lived realities of agro-processing SMEs. Specifically, agro-processing SMEs experience stagnant sales, produce poor quality products which undermines their growth potential. The UBOS (2022) report indicates that the GDP contribution of the agro-processing sector decreased from 9.8% in 2020 to 8.3% in 2022, falling short of the low-income country average of 11.9%. 65% of SMEs stagnate in terms of sales, 76% of agro-processors lack quality certification, resulting in production of substandard products. Most SMEs struggle with inadequate market share with most of them making low profits. The continued underperformance indicates that the current policy interventions in the agro-processing subsector do not fully address the critical growth constraints. Thus, signalling the need for a renewed policy focus.

The paper explores how policy regulations shape the integration of sustainable practices among agro-processing SMEs. It investigates owner-perceived practices that could enhance enterprise sustainability. It also examines strategies through which agro-processing enterprises can be better leveraged toward sustainable development.

Methods

The study adopted a qualitative inductive approach and in-depth interviews were employed to collect data using an interview guide from a population of 30 owners of agro-processing SMEs. Saturation was attained at the 20th interview. The interviews were transcribed and then analysed thematically using QSR NVivo 14 software. Ethical approval was obtained and informed consent was obtained from all participants.

Findings

Social sustainability emerged as the most dominant practice among agro-processing SMEs while economic practices were the least dominant of all sustainable practices. The under emphasis of economic sustainable practices signals a potential avenue for policy interventions aimed at bolstering economic sustainability within agro-processing enterprises.

Participants advocated for adequate government support in the form of subsidies or tax breaks, affordable loans or financial grants for investment in modern technology for value addition and boost competitiveness. The challenge of high and multiple taxes was also revealed. The problem of unregulated competition in the agro-processing industry was revealed. Presence of counterfeit machinery and other counterfeit inputs. They affect production efficiency, increases operating costs and raises concerns about product safety and effectiveness.

Conclusion

The findings emphasise the necessity of adopting a comprehensive sustainability approach that balances economic viability, environmental responsibility, and social inclusion. The findings also stress the pivotal role of supportive regulatory policies in enabling agro-processing SMEs to attain sustainability. Specifically, the study calls for targeted, sector-specific policy interventions to support sustainable practices, alleviate the unique challenges faced by SMEs, and cultivate an enabling environment for growth and development within the sector.

Wages, Productivity Gaps, and Structural Transformation: Evidence from African Manufacturing Firms

Symon Wandiembe and *Ibrahim Mike Okumu*

Introduction

Manufacturing is widely regarded as the cornerstone of structural transformation and long-term economic growth, given its potential for scale economies, technological spillovers, and productivity convergence with advanced economies. Yet, Africa's manufacturing productivity has stagnated—declining from 23% to 12% of advanced-economy levels between 2003–2018. Persistent productivity gaps between firms remain a major impediment to industrial development and competitiveness. While much of the existing literature attributes productivity differentials to technological diffusion and firm characteristics, limited empirical attention has been given to how wage structures shape productivity dynamics within African manufacturing firms.

Grounded in the efficiency wage hypothesis, this study posits that higher wages can enhance worker effort, reduce turnover, and attract skilled labour—thereby narrowing productivity gaps between frontier and lagging firms. The analysis seeks to fill this empirical gap by exploring the extent to which wage structures influence productivity convergence and the mechanisms through which this relationship supports Africa's structural transformation agenda.

Methods

The study draws on firm-level data from the World Bank Enterprise Surveys (ES) covering 7,640 manufacturing firms across 27 African countries. Manufacturing firms are classified by ISIC codes 13–33 and stratified by size (small: 5–19 employees; medium: 20–99; large: 100+). Firm-level productivity is measured as sales per worker, and the productivity gap is defined as the difference between a firm's productivity and that of the most productive (frontier) firm within the same country-sector pair.

The empirical model estimates the impact of wages on firm-level productivity gaps using the following specification:

where is the log of the productivity gap, is the log of wage per worker, and the vectors capture worker characteristics, firm attributes, business environment factors, and country-sector fixed effects, respectively.

where denotes either firm or firm . and represent the sales (in constant 2010 US dollars) of the and firms, respectively, while and denote the corresponding numbers of employees. Firm is the productivity frontier firm, and firm is a non-frontier firm. Both firms belong to the same ISIC industry code and are located in country.

To address potential endogeneity between wages and productivity (since higher productivity may itself lead to higher wages), the study employs an Instrumental Variable Two-Stage Least Squares (IV-2SLS) approach. The instrument— constructed as the country–industry–size average wage excluding the firm's own wage—captures competitive labour market effects while mitigating simultaneity bias. Instrument validity is confirmed through first-stage F-tests (Prob > F = 0.000) and Durbin–Wu–Hausman tests, which reject the null of exogeneity for wages in all but one model.

Findings

Wages and productivity gaps: Across all model specifications, higher wages are significantly associated with smaller productivity gaps. A 1% increase in wages reduces the productivity gap by approximately 0.33–0.37%, supporting the efficiency wage hypothesis. Higher and equitable wages increase the opportunity cost of job separation, enhancing worker effort, retention, and firm loyalty. They also attract higher-quality labour and strengthen relational contracts, mitigating the effects of weak formal enforcement mechanisms.

Non-linear effects:

The inclusion of a quadratic wage term reveals a threshold effect—at low wage levels, wage increases may initially widen the productivity gap, but beyond a critical threshold, further wage increases promote convergence towards the productivity frontier. This suggests that wage levels must reach a certain adequacy before efficiency gains materialise.

Firm heterogeneity:

Foreign ownership: Foreign-owned firms exhibit faster productivity convergence than domestic firms, likely due to integration into global production networks and better management practices.

Urban location: Firms located in cities experience smaller productivity gaps. Further, increasing wages in firms located in urban areas accelerates convergence to the frontier productivity faster than firms located in non-urban areas, reflecting agglomeration benefits and better infrastructure access.

Firm size: Medium and large firms display stronger wage-productivity linkages than small firms, indicating scale advantages in translating wage increases into efficiency gains.

Business environment factors:

- Electricity outages and corruption significantly widen productivity gaps, highlighting infrastructure and governance as critical constraints to in-dustrial performance. Power outages increased firm productivity gap at

a rate of 0.6 percent, suggesting that improving wages in the midst of power outages (or low supply) cannot not address the productivity gap.

- Access to credit and adequate workforce education are positively correlated with productivity convergence.
- Country income differences:
- Disaggregation by national income levels reveals that the wage effect is strongest in low-income countries, suggesting that moderate wage increases in such contexts yield disproportionately high productivity returns.

Conclusion

This study provides robust empirical evidence that higher wages narrow productivity gaps in Africa's manufacturing sector. However, the findings also caution against premature wage hikes in firms below the efficiency threshold, as such measures may initially strain productivity if not matched by improvements in management, training, and technology adoption. The findings underscore the importance of coupling wage policy reforms with broader institutional strengthening and capacity-building initiatives to unlock Africa's manufacturing potential.

Human Resources Training and Development, Value Creation and Employee Performance in the Public Service

Seperia Bwadene Wanyama, *Samuel Eyam, Christopher Muganga, and Davis Malowa Ndanyi Agnes Sansa*

Introduction and Background

Employee performance in Uganda's public service remains a key concern due to persistent inefficiencies, low productivity, and limited service quality, despite decades of HR reforms, including Results-Oriented Management and performance contracts. These initiatives have not consistently yielded expected improvements, raising questions about the effectiveness of Human Resource Training and Development (HRTD) as a strategic tool for enhancing employee performance and creating both employee and public value. This study examines how HRTD contributes to performance through **HR value creation**, focusing on HR's strategic role and perceived HR service quality as mediators. Its objectives were to assess the effects of HRTD on employee performance, the relationship between HRTD and value creation, and the mediating role of HR value creation.

The study is anchored in the **Harvard Model of HRM** (Beer et al., 1984), **Human Capital Theory** (Becker, 1964), and the **Resource-Based View (RBV)** (Barney, 1991). HRTD is conceptualized as a strategic investment in employee knowledge and competencies, enhancing both employee and institutional capability and stakeholder value. Strategic alignment with organizational goals, skill investment, and the development of unique, inimitable capabilities underpin the study's theoretical framework. Empirical evidence suggests that HRTD enhances competencies, accountability, and performance, but effectiveness in the public sector is often constrained by weak strategic alignment, fragmented programs, and limited evaluation. HR's strategic role and perceived service quality are critical mechanisms that translate training into performance gains.

Methods

An explanatory survey design employing a quantitative approach was used. Data were collected from 416 respondents across the Ministry of Public Service, two additional ministries, and seven local governments, representing all management levels. Measurement scales adapted from prior studies demonstrated strong reliability (Cronbach's $\alpha = .820–.885$). Data quality was ensured through assessments of normality, outliers, multicollinearity, and autocorrelation, with factor analysis confirming construct validity. Analyses included descriptive statistics, Pearson correlations, hierarchical regression, and PROCESS bootstrapping to test direct and mediated effects.

Findings

Respondents were diverse in gender, age, education, experience, and staff levels. Correlation analysis revealed significant positive relationships between employee performance and all main variables: HR training, HR development, HR strategic role, and HR service quality. Hierarchical regression showed that HR value creation factors explained 30.5% of performance variance, and adding HRTD factors increased the explanation to 37.8%, with all four HR variables significantly predicting performance. PROCESS bootstrapping confirmed that HR strategic role and perceived HR service quality **partially mediated** the effects of HRTD on performance. Both HR training and development influenced performance directly and indirectly, highlighting the importance of strategic HR practices, quality HR services, and targeted employee development for enhancing public sector outcomes.

Conclusions and Recommendations

HRT and HRD significantly improve employee performance in Uganda's public service, both directly and indirectly through value creation mechanisms. The findings reinforce **Human Capital Theory, the Harvard HRM model, and RBV**, indicating that investing in employee skills develops unique capabilities that sustain performance. HRTD's impact is maximized when employees perceive HR practices as strategically relevant and of high quality. The comparable mediating effects of HR strategic role and service quality underscore the multidimensional nature of HR value creation. Public sector training programs should move beyond routine compliance toward **strategically integrated, high-quality initiatives** embedded in supportive HR systems to enhance motivation, trust, engagement, and measurable performance outcomes.

The study contributes theoretically by integrating HR value creation into the HRTD–performance relationship, empirically by demonstrating mediation effects, and practically by offering a framework for policymakers to design strategic, value-driven training aligned with national development priorities, including Uganda's NDP III and IV and UN SDGs 4, 8, and 10.

Areas for Further Research

Future studies should examine **longitudinal impacts**, cross-agency comparisons, public-value outcomes, and qualitative insights into organizational culture and employee experiences. The role of digital HR and e-training platforms in enhancing HR value creation and employee performance also warrants further investigation.

SDG 9
Industry, Innovation and Infrastructure
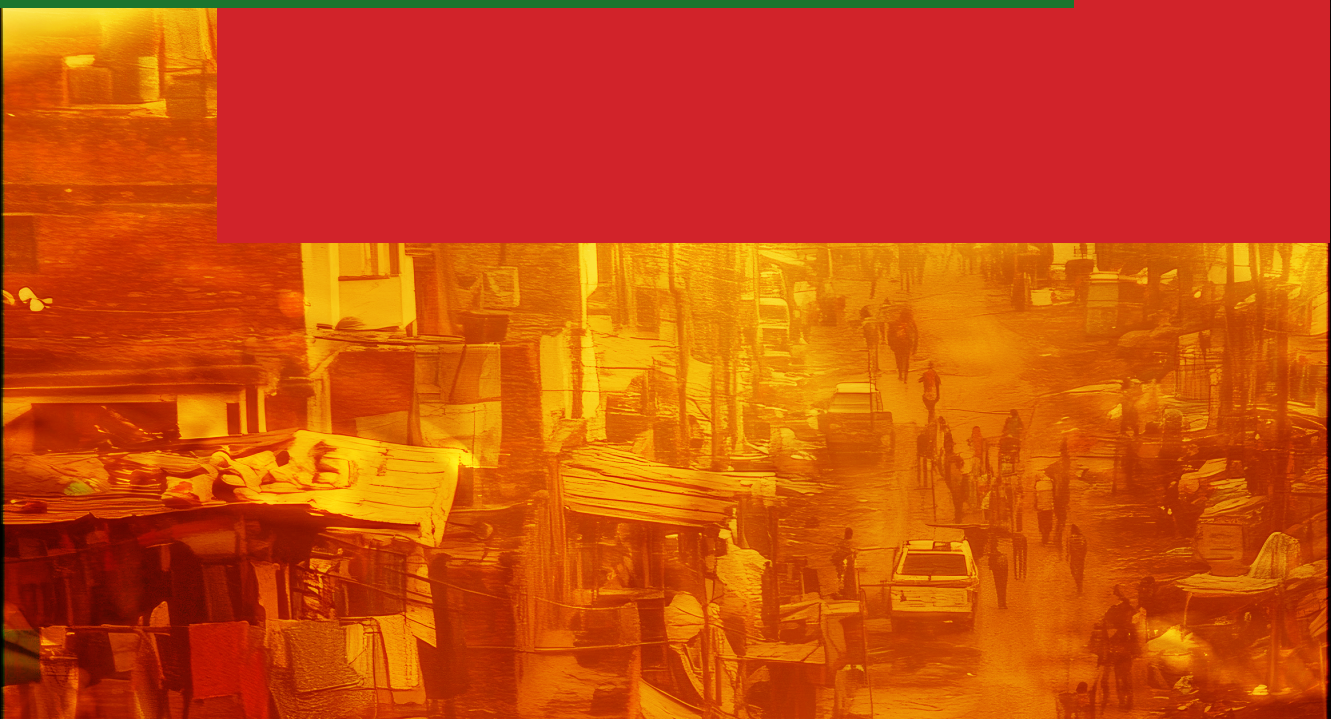
SDG 9 aims to build resilient infrastructure, promote inclusive and sustainable industrialisation, and foster innovation by improving access to information and communications technology (ICT) and supporting research and development. Some key aspects of this goal include but are not limited to: i) developing reliable and sustainable infrastructure, such as roads, internet connectivity, and digital infrastructure, to support economies and communities; ii) promoting industrial growth that is inclusive and sustainable, which means it should be environmentally responsible and provide economic opportunities for all; iii) fostering research and development and encouraging innovation to find solutions for economic, social, and environmental challenges; iv) increasing access to ICT, particularly the internet, to empower industries and foster innovation among others.

The following papers presented in this section align to SDG 9:

1. **Manufacturing Output and Volatility in Sub-Saharan Africa: How Important Are Information, Freedom and Financial Development? John Bosco Nnyanzi, Nicholas Kilimani,** *Salmon Mugoda* and Peter Babyenda

2. **"Impact of Lumpiness, Temporal Variability, and Transformation on LSTM Forecasting."** *Gilbert Mutungi,* Ronald Wesonga, Francis Fuller Bbosa and Richard Tuyiragize

3. **"Internal Innovations, Foreign Technology and Productivity in Sub-Saharan Africa's Manufacturing Firms: The Role of Absorptive Capacity."** *Edward Bbaale*

Manufacturing Output and Volatility in Sub-Saharan Africa: How Important Are Information, Freedom and Financial Development?

***John Bosco Nnyanzi**, Nicholas Kilimani, Salmon Mugoda and Peter Babyenda*

Introduction

This study examined the direct as well as the mediating role of information availability and economic freedom on the relationship between financial development and manufacturing sector output and volatility using data from 2002 to 2021 from Sub Saharan Africa. The Panel Corrected Standard Error technique was employed to take care of the often-ignored issues of cross-sectional dependence, serial correlation and heteroscedasticity. The advantage of employing the PCSE technique is that it was modelled in such a way that it takes care of heteroscedasticity, which normally arises when the variance of the disturbance differs across samples. Moreover, the choice was further influenced by the size of the time periods in relation to the sample size.

Findings

The most outstanding finding was that the often-documented positive manufacturing output effect of financial development, here confirmed, originates essentially from financial institutions and less from financial markets. A similar finding is notable when manufacturing volatility is considered, albeit with an adverse effect. Further disaggregation reveals that only the depth of financial institutions and markets as well as market efficiency improve manufacturing sector output whereas financial institutions efficiency is deleterious. Yet, it is shown that with the exception of financial institutions access which is negatively related to output, the depth of financial institutions and markets as well as the latter's efficiency catalyse volatility. Quite novel is the finding that while information availability is inversely related to manufacturing output volatility, economic freedom enhances both output and volatility, though the latter is increased at substantially lower rate compared to output. Information availability is also observed to orchestrate the effect of financial institutions on sector output via its de facto measure and weakly catalyses the financial markets via the de jure information channel. On the other hand, the volatility negative effect of financial development is generally further weakened by the globalisation information index and its sub-indices. Additional findings are discussed.

Conclusion

We argue for policies that focus on financial institutions and markets' depth as well as financial market efficiency if the manufacturing sector should achieve the required boost to become an engine of growth. Other policies directed towards financial institutions' access would target reducing volatility. However, there is need for caution when designing strategies to cater for depth in the financial institutions and markets as well as the latter's efficiency as they could result in manufacturing volatility. Additionally, we support the design of policies that promote the availability of information given the importance of the de facto and de jure information measures in respectively propelling financial institutions and markets. Such policies would go a long way not only in increasing manufacturing output but also reducing the manufacturing output volatility.

Impact of Lumpiness, Temporal Variability, and Transformation on LSTM Forecasting

Gilbert Mutungi, *Ronald Wesonga, Francis Fuller Bbosa and Richard Tuyiragize*

Introduction

Forecasting is essential for guiding policy and managing risks by providing insights into future trends. Advances in data availability and computational power have enabled the use of deep learning methods, particularly Long Short-Term Memory (LSTM) networks, in time series forecasting. While LSTMs are often considered robust, their sensitivity to data characteristics such as lumpiness and temporal variability is not well understood. Previous studies have also reported inconsistent LSTM performance depending on data features. This study addresses this gap by examining three key questions: (1) How does lumpiness affect LSTM forecasting accuracy and stability? (2) How do data transformations influence performance? (3) How does temporal variability interact with model accuracy?

Method

Four univariate time series were analysed: Ugandan maize prices, rainfall volumes, inflation rates, and the M4 Benchmark dataset (M42869). These series were selected for their diverse structural properties, including different levels of trend, seasonality, and lumpiness. Box-Cox transformations were applied to each series to generate a corresponding set with more stable statistical properties.

LSTM models of two stacked LSTM layers, dropout regularisation, and a fully connected output layer were implemented using R. These were optimised with the Adam algorithm, early stopping, and hyperparameter tuning via sliding-window cross-validation. Each model was trained and tested across 30 repeated runs to account for variability due to random initialisation. Forecast performance was evaluated using Mean Absolute Percentage Error (MAPE) for accuracy and the Coefficient of Variation (CV) for stability. For comparison, ARIMA models were implemented using the search-wise algorithm in R.

Findings

Results indicate that data lumpiness strongly reduces both the accuracy and stability of LSTM forecasts. Highly lumpy series, such as inflation and M42869, produced highly variable results across repeated runs. Applying appropriate data transformations substantially improved performance, reducing MAPE by up to 35% and enhancing stability. In contrast, for series with low lumpiness, such as rainfall and maize prices, transformations had minimal or sometimes negative effects, occasionally increasing forecast error.

Comparisons with ARIMA models showed that, prior to transformation, ARIMA outperformed LSTM in all but one series. After transformation, LSTM outperformed ARIMA in two of the four series, highlighting its potential when properly pre-processed. Additionally, LSTM performance declined when trend and seasonal components interacted non-monotonically. This suggests that complex trend-seasonality structures can disrupt the LSTM gating mechanisms, reducing its ability to filter noise and propagate relevant information.

Conclusion

The study concludes that LSTM performance in time series forecasting is dependent on the underlying data structure. Lumpiness and temporal variability strongly influence both accuracy and stability, while appropriate data transformations can mitigate these effects.

The study recommends that practitioners evaluate structural features such as lumpiness, trend strength, and seasonality before applying LSTM models. Data transformations should be applied selectively, especially for irregular or highly variable series, to improve forecasting reliability. For smoother, low-variability series, transformations may offer little benefit.

Internal Innovations, Foreign Technology, and Productivity in Sub-Saharan Africa's Manufacturing Firms: The Role of Absorptive Capacity

Edward Bbaale

Introduction

The study investigates how both internal innovations—such as research and development (R&D) and human capital development (HCD)—and external knowledge transfers—such as technology embodied in imported inputs, foreign ownership, and exporting—affect firm-level productivity in the manufacturing sector of Sub-Saharan Africa. It places particular emphasis on the role of internal absorptive capacity, defined as the ability of firms to recognise, assimilate, and apply new knowledge, in enhancing the productivity benefits derived from foreign technology. Using World Bank Enterprise Survey (WBES) data covering twenty-six African countries, the study employs both Ordinary Least Squares (OLS) and Two-Stage Least Squares (2SLS) estimations to account for firm heterogeneity and possible endogeneity.

Findings

The findings reveal that internal and external innovations each have significant positive effects on productivity, but their joint impact is magnified when firms possess strong absorptive capacity. Firms that invest in R&D, employee training, and the development of skilled labour tend to experience substantial productivity gains. Likewise, external channels of innovation - particularly through the importation of intermediate goods, participation in export markets, and foreign ownership - are key drivers of efficiency and technological upgrading. Importing inputs increases productivity by between 32 and 39 percent, exporting raises it by approximately 36 to 45 percent, and foreign ownership contributes gains of up to 48 percent. However, these benefits are not automatic: importing inputs or participating in export markets yields the greatest productivity improvements only when firms have internal capabilities that allow them to learn and adapt foreign technologies effectively.

The study highlights that the complementarity between internal and external sources of innovation is crucial. Firms that combine R&D investment, worker training, and the employment of skilled personnel are up to 73 percent more productive than those that undertake only one or two of these activities. This synergy underscores the importance of developing a strong knowledge base within firms as a prerequisite for benefiting from international technology transfers. Although both foreign and domestically owned firms benefit from importing and exporting,

foreign-owned importers tend to record higher productivity gains, possibly due to better management practices and stronger access to global knowledge networks. Nevertheless, productivity improvements are observed across firms of varying sizes, demonstrating that innovation and absorptive capacity policies can yield widespread benefits throughout the manufacturing sector.

The results point to a broader policy lesson for Sub-Saharan Africa's industrial transformation. Importing foreign technology and participating in global markets alone will not guarantee productivity growth or competitiveness unless governments and firms invest in the internal capabilities required to absorb and use external knowledge. Policies that support R&D, technology upgrading, and workforce training are therefore essential complements to trade and investment liberalisation. Governments should consider targeted R&D tax incentives, innovation grants, and technical training schemes to enhance firms' absorptive capacity. Simplifying import procedures and reducing tariffs on intermediate goods would also facilitate access to foreign technology, while export promotion programs could reinforce the learning-by-exporting channel. Moreover, partnerships between foreign and domestic firms can serve as conduits for technology transfer and skills development. Strengthening linkages across sectors, promoting knowledge sharing, and integrating innovation support into national industrial strategies will help sustain productivity growth.

Conclusion

The study concludes that Africa's manufacturing productivity depends fundamentally on the interaction between internal innovation capacity and external technology acquisition. Building the absorptive capacity of firms through human capital development and R&D investment is vital if the continent is to reap the full benefits of globalisation and technological progress. Governments must, therefore, complement openness policies with strategic investment in learning infrastructure, innovation systems, and institutional capacity to achieve sustainable industrial competitiveness and long-term economic transformation.

SDG 10
Reduced Inequalities

SDG 10 aims to reduce income inequality within and among countries, while also eliminating discrimination and ensuring equal opportunities for everyone, regardless of factors like age, gender, race, ethnicity, disability, or origin. Key aspects include but are not limited to: i) targeting higher income growth for the poorest segments of the population in every country; ii) combating discrimination based on age, sex, disability, race, ethnicity, religion, economic, or other status; iii) ensuring that all people, including vulnerable groups and developing countries, are included in social, economic, and political life; iv) enhancing the representation of developing countries in global financial institutions and directing more financial flows to them among others.

Under this goal, this section presents the following papers:

1. **Questioning Uganda's Refugee Policy Framework: Eighty Years in Review. John A. Mushomi,** *Sandra Mirembe, Joseph Munyangabo, and Nicholas Tunanukye*

2. **Multigenerational Work Ethics, Inclusivity, and Organisational Performance: A Comparative Study of Public Agencies in Uganda and Kenya. *Sansa Agnes***

3. **Urbanisation and Green Space: Analysing Urban Green Space Accessibility in Uganda' Cities. C*hristian Kakuba*** *and Abel Nzabona*

Questioning Uganda's Refugee Policy Framework: Eighty Years in Review

John A. Mushomi, Sandra Mirembe, Joseph Munyangabo, and Nicholas Tunanukye

Introduction

Uganda's refugee policy is widely celebrated as one of the most progressive in the world, anchored in the Refugee Act (2006) and the Refugee Regulations (2010). However, this paper interrogates the political, historical, and institutional foundations of that reputation, arguing that Uganda's framework—though legally sophisticated and internationally lauded—is driven less by domestic priorities than by global political and donor interests. Drawing from an 80-year historical review of legal and policy instruments, from the Control of Aliens and Refugees Act (1960) to the Comprehensive Refugee Response Framework (2017), the study contextualises Uganda's refugee management within shifting international paradigms and evolving domestic political economies.

Methods

The research employed a contextual desk review of 43 peer-reviewed papers, 23 legal instruments, and Hansard debates to analyse how macro- and micro-level forces shape Uganda's refugee governance. It critically examines the alignment— and frequent disjuncture—between international frameworks such as the 1951 UN Refugee Convention and the 1969 OAU Convention with Uganda's domestic refugee laws and political practice.

Findings

The findings reveal that Uganda's "open-door" and self-reliance policies, framed as humanitarian innovations, often serve geopolitical and donor-driven objectives rather than refugee or host community welfare. Despite significant legislative reforms, the mismatch between policy ideals and implementation persists due to resource limitations, institutional ambiguities, and politicised decision-making.

Conclusion

The paper concludes that Uganda's refugee policy trajectory reflects an "externally smart but domestically detached" governance model, where international compliance supersedes national contextual realities. It calls for a community-centred and historically grounded policy regime—one that acknowledges Uganda's long-standing experience as a host country while embedding refugee protection within local governance systems, participatory planning, and sustainable development

strategies. Policymakers are urged to institutionalise continuous monitoring and evaluation frameworks, integrate refugee issues into national and local planning, and promote genuine stakeholder engagement, especially among refugees and host communities.

Multigenerational Work Ethics, Inclusivity, and Organisational Performance: A Comparative Study of Public Agencies in Uganda and Kenya

Sansa Agnes

Introduction

Public agencies worldwide are increasingly expected to provide efficient, transparent, and citizen-focused services. In East Africa, reforms have sought to strengthen accountability and effectiveness, yet challenges persist. Uganda and Kenya offer an interesting comparative context: Uganda emphasises agency rationalisation to reduce redundancy and improve efficiency, while Kenya focuses on performance contracting, devolution, and digital transformation to enhance service delivery. A critical but underexplored factor is workforce dynamics, particularly the multigenerational composition of employees, which includes Baby Boomers, Generation X, Millennials, and Generation Z. Older cohorts tend to value loyalty, hierarchy, and job security, whereas younger cohorts prioritise flexibility, innovation, and work–life balance. Understanding how generational diversity affects performance offers important insights for managing public sector reforms effectively.

Existing research on generational dynamics is inconsistent. While some studies report intergenerational harmony, others find significant differences in work ethics. Some scholars argue generational effects are minimal, whereas others highlight socio-economic context as a key determinant of values. Most studies are Western-focused, with limited evidence from Sub-Saharan Africa, and few link multigenerational work ethics to organisational-level outcomes, leaving a gap in understanding how these dynamics influence public sector performance in African contexts.

Uganda's rationalisation reforms aim to reduce duplication, cut costs, and enhance efficiency but have neglected the human dimension, particularly employee transitions, redeployments, and morale. For instance, over 1,236 employees affected by agency closures, such as Uganda National Roads Authority, remain uncompensated and have resorted to legal action (CEO East Africa Magazine, 2025). Limited inclusivity in reform planning weakens trust and cohesion, especially across generational cohorts. Similar experiences in Kenya show that performance gains are constrained when human resource dynamics are overlooked, highlighting the misalignment between structural reforms and workforce management as a key policy problem.

This study examines how employees from different generations perceive and enact work ethics in Ugandan and Kenyan public agencies? It also examines the ways

in which inclusivity practices affect organisational performance, and how do they interact with multigenerational work ethics? Finally, it enquires into the cross-country lessons that can inform effective human resource management in East Africa?

Methods

The study employed a quantitative comparative design, using a census survey design where self-administered questionnaires were distributed to departmental heads across diverse public agencies in Uganda and Kenya. The comparative lens highlighted how Uganda's rationalisation and Kenya's performance contracting reforms shape generational dynamics and inclusivity.

Findings

Based on a survey of 438 respondents, the study found that multigenerational work ethics and inclusivity practices significantly influence organisational performance. Work ethics correlated positively with performance ($r = 0.614$, $p < 0.001$), explaining 37.6% of variance, while inclusivity also showed a strong positive effect ($r = 0.681$, $p < 0.001$) and mediated the relationship between work ethics and performance ($\beta = 0.42$, $p < 0.001$). Generational differences were significant ($F(3,754) = 12.43$, $p < 0.01$), with Millennials scoring higher on innovation and adaptability, and Baby Boomers on integrity and procedural compliance. Comparative analysis indicated that Kenyan agencies excelled in digital adaptability and participatory leadership, whereas Ugandan agencies scored higher on ethical compliance and discipline. The structural model explained 58% of performance variance, demonstrating that inclusive, diversity-sensitive practices turn generational diversity into a performance asset.

Conclusion

Multigenerational work ethics and inclusivity are critical determinants of public agency performance. Generational differences shape attitudes and behaviours, but when inclusivity is embedded in management, these differences complement each other, enhancing teamwork, trust, and overall performance. Structural reforms in both countries yield greater benefits when workforce dynamics are prioritised. Aligning multigenerational workforce management with inclusive, diversity-aware policies is, therefore, essential for achieving sustainable improvements in public sector efficiency, accountability, and service delivery in East Africa.

Urbanisation and Green Space: Analysing Urban Green Space Accessibility in Uganda' Cities

Christian Kakuba and *Abel Nzabona*

Introduction

One of the desired qualities of an Age-friendly City (AFC) is the prevalence of urban green space as espoused in Goal 11 of the Sustainable Development Goals (SDGs). Indeed, cities and human settlements are meant to be: inclusive, safe, resilient and sustainable. SDG target 11.7 specifically aims to provide universal access to safe, inclusive and accessible green and public spaces. In Uganda, Urban Green Space is under threat due to competing land uses for such things as markets, transport and commercial construction activities amidst high rates of urbanisation and a laissez-faire attitude to urban planning.

The conceptual framework adopted in this paper anchors on the work propounded by Wolff et al., (2022). The authors propose three dimensions of obstacles to realising benefits of urban spaces namely: physical, personal and institutional barriers. We looked at literature where the proportion of people living in urban areas increased from 1.6 million in 1991 to about 12.4 million in 2022. We also documented that urban green spaces have diverse benefits such as improving air and water quality, facilitating health and well-being (through alleviating stress, supporting relaxation and physical activity) and improving social interaction. We also found out that the benefits of UGS notwithstanding, green environment is limited, or even shrinking, in various urban environments. We most importantly realised that no study has investigated correlates of access to UGS in Uganda's cities in the recent past, a justification for carrying out this study.

Whereas urban green spaces have diverse benefits including: improving air and water quality, facilitating health and well-being and improving social interaction, the green environment is shrinking, in various urban environments. In Uganda, the threat to existing green and public space stems from competing land uses for; markets, transport and commercial construction activities. Apart from limited green space, free accessibility to what is supposed to be open/public space is questionable. Some of the green spaces are enclosed while others are manned by private security personnel. Although there is ample research on Uganda's urban systems and infrastructure such as roads, education and health, less work has been done on issues pertaining to urban green space.

This paper analyses the predictors of accessibility to urban green space in Uganda's cities. We specifically explore how demographic, socioeconomic and physical factors influence perceptions on access to UGS.

Methods

The paper used secondary survey data collected in March 2022 by the Uganda National Population Council and Chrisbert Consult (U) Ltd where a sample of 936 urban residents was drawn from six cities, namely; Kampala, Masaka, Fort portal, Gulu, Arua and Jinja using Taro Yamane (1967) formula for sample size determination. We fitted a probit regression model to isolate the predictors of perceptions on accessibility to Urban Green Space in Uganda's cities.

Findings

Findings indicate that 37 percent of the respondents thought that urban green spaces were available in their cities of residence and that this varied by urban area. Besides, there was, equally, variance between availability of and accessibility to urban green spaces in the cities in question. Overall, only 29% of the respondents reported that green spaces in their cities were freely accessible to the public. UGSs were perceived to be more accessible in Fort Portal and Jinja cities as compared to Kampala but less accessible in Arua City. Persons who reported that urban walkways existed in their city and that urban night travel was safe had higher perceptions on urban green space accessibility than those who indicated absence of such facilities and the ones who reported unsafe travel, respectively.

Besides, having stayed in the urban area for 50 years and longer reduced the probability regarding accessibility to urban green space in comparison with having been an urbanite for less than 10 years. Persons who were divorced/separated had an increased perception probability regarding accessibility to urban green space as compared to their never married counterparts.

Respondents who owned a television set had a reduced perception probability in comparison with those without such a media set. Besides, those who cooked using electricity had an increased perception probability regarding accessibility to UGS as compared to those who used charcoal for cooking.

Conclusion

There is a low perception on the prevalence of and accessibility to green space in Uganda's cities. Physical, demographic and social factors significantly influence the perception levels. The study recommends improving the physical conditions of the cities as well as raising the socio-economic status of the urban residents as this would, in the long term, translate into higher levels of urban green space accessibility. Conserving existing and planning for new urban green spaces are options for stakeholder consideration.

SDG 12
Responsible Consumption and Production

SDG 12 focuses on "doing more and better with less". This means improving resource and energy efficiency, managing waste through reduction, recycling and reuse, promoting sustainable infrastructure, and ensuring access to basic services to enhance quality of life without depleting natural resources for future generations. Some key aspects of the goal include: i) using natural resources efficiently and sustainably, minimising their depletion and degradation; ii) reducing waste generation through strategies like prevention, reduction, recycling, and reuse; iii) promoting the efficient use of energy is a core component of sustainable production and consumption; iv) creating green and decent jobs as well as improving the overall quality of life for everyone by decoupling economic development from increasing material consumption as well as; v) fostering greater awareness among the public and policymakers to encourage shifts in consumption and production patterns.

This section presents the following papers that align to this goal:

1. "Assessing Sustainable Consumption Practices of Ugandan Youth through an Extended Value Belief Norm Theory: A Moderated Mediation Approach." *Hanifah Nantale*

Assessing Sustainable Consumption Practices of Ugandan Youth through an Extended Value Belief Norm Theory: A Moderated Mediation Approach

Hanifah Nantale, *Anthony Tibaingana, Ahmed Mutunzi Kitunzi, Zaina Nakabuye, Samuel Kabbera and Marion Nanyanzi*

Introduction

Youth play a vital role in challenging unsustainable consumption and promoting sustainable lifestyles worldwide. This is due to their proficiency with digital platforms, evolving values, and global economic shifts, which give them significant spending power and unique tastes. However, young people are the primary consumers of various products globally, contributing to environmental and social issues that threaten both the planet and human health. Increased youth consumerism results in waste, resource depletion, pollution, greenhouse gas emissions, global warming, and climate change. Consequently, 70 per cent of the global youth population is deeply concerned about climate and environmental issues. This percentage is even higher in developing countries like Uganda, where climate change impacts are expected to be more severe. As a result, the Ugandan government has implemented several laws and policies to reduce the harmful effects of consumerism on the environment, including the National Environment Act Cap 181, the National Climate Change Act Cap 182, the National Wetlands Policy, the National Energy Policy, and the Environment and Safeguards Policy.

Despite these efforts, serious environmental challenges persist due to consumption. Ugandan youth need to adopt sustainable consumption practices (SCPs) to minimise the negative environmental impacts of their consumption. Such practices may be influenced by their values, beliefs, and norms, as explained by the value belief norm theory, which is used in studies predicting sustainable behaviour. However, these studies mainly focus outside Africa; applying the model to Ugandan youth is essential. No research has extended the VBN theory to include situational factors, such as access to facilities and time, nor examined its moderated mediation effects. Therefore, this study utilised the extended VBN model to investigate the consumption practices of Uganda's youth population.

Study hypotheses

> H1 Values have a positive effect on the sustainable consumption practices of Ugandan youth in the Greater Kampala Metropolitan Area.

> H2 Values have a positive effect on the norms of Ugandan youth in the Greater Kampala Metropolitan Area.

H3 Norms have a positive effect on the sustainable consumption practices of Ugandan youth in the Greater Kampala Metropolitan Area.

H4 Norms positively mediate the relationship between values and sustainable of Ugandan youth in the Greater Kampala Metropolitan Area.

H5 Situational factors positively affect sustainable consumption practices of Ugandan youth in the Greater Kampala Metropolitan Area.

H6 Situational factors moderate the relationship between norms and sustainable consumption practices of Ugandan youth in the Greater Kampala Metropolitan Area.

H7 Situational factors moderate the relationship between mediated norms and sustainable consumption practices of Ugandan youth in the Greater Kampala Metropolitan Area.

Methods

The study adopted a quantitative methodology targeting youth in Greater Kampala, Uganda, with data gathered through in-home surveys. Stratified random sampling was used at the district, division, ward, and cell levels to select individuals randomly. A total of 400 respondents answered a structured questionnaire featuring closed-ended questions. Responses were recorded using a five-point Likert scale and importance ratings. The questionnaire included sections on demographics and study variables. Data analysis was conducted with SPSS 23 for descriptive statistics and PROCESS Macro for regression analysis to examine the relationships.

Findings

The study's findings show that the influence of values on sustainable consumption practices was positive and statistically significant (effect=0.302; $p<0.001$), supporting hypothesis one. The impact of values and norms was also positive and statistically significant (effect=0.553; $p<0.001$). Norms were found to positively and significantly affect sustainable consumption practices (effect=0.101; $p<0.005$). The indirect effect of personal values on sustainable consumption through norms as mediators was positive and statistically significant (effect=0.097; LLCI=0.036; ULCI=0.192). Therefore, norms partially mediate the relationship between values and sustainable consumption practices, supporting H4. The direct influence of situational factors on sustainable consumption practices (effect=0.323; $p<0.001$; ULCI=0.2412, ULCI=0.3634) was also positive and statistically significant. Additionally, situational factors as moderators of the relationship between norms and sustainable consumption were demonstrated by the interaction term (effect=0.101;

p<0.005; LLI=0.0224, ULCI=0.1806). The results further indicated that the conditional process model was positive and significant, as the 95% confidence interval for the index of moderated mediation did not include zero (B=0.0562, SE=0.0318, CI=0.0071 to 0.1315).

Conclusions

The study examined whether values, norms, and situational factors influence sustainable consumption among Ugandan youth. It finds that consumption is motivated by values, moral obligations to protect the environment, societal expectations, and contextual motivations. These insights can assist government, civil society, and corporations in developing policies and programmes for environmental conservation in Uganda.

Ugandan institutions, such as NEMA, the Ministry of Water and Environment, and Parliament, can utilise these findings to craft laws that emphasise the importance of sustainable consumption in preventing harm to the environment and society, appealing to both biospheric and altruistic values. SCPs should be promoted to youth as their responsibility and socially accepted behaviours to shape norms. KCCA should ensure proper provision of recycling and waste disposal facilities to reduce pollution. Civil society can promote SCPs to youth as convenient practices. Ugandan product companies can leverage these findings to improve sustainability messaging on packaging and media, emphasising environmental conservation as a personal and social norm.

SDG 13
Climate Action
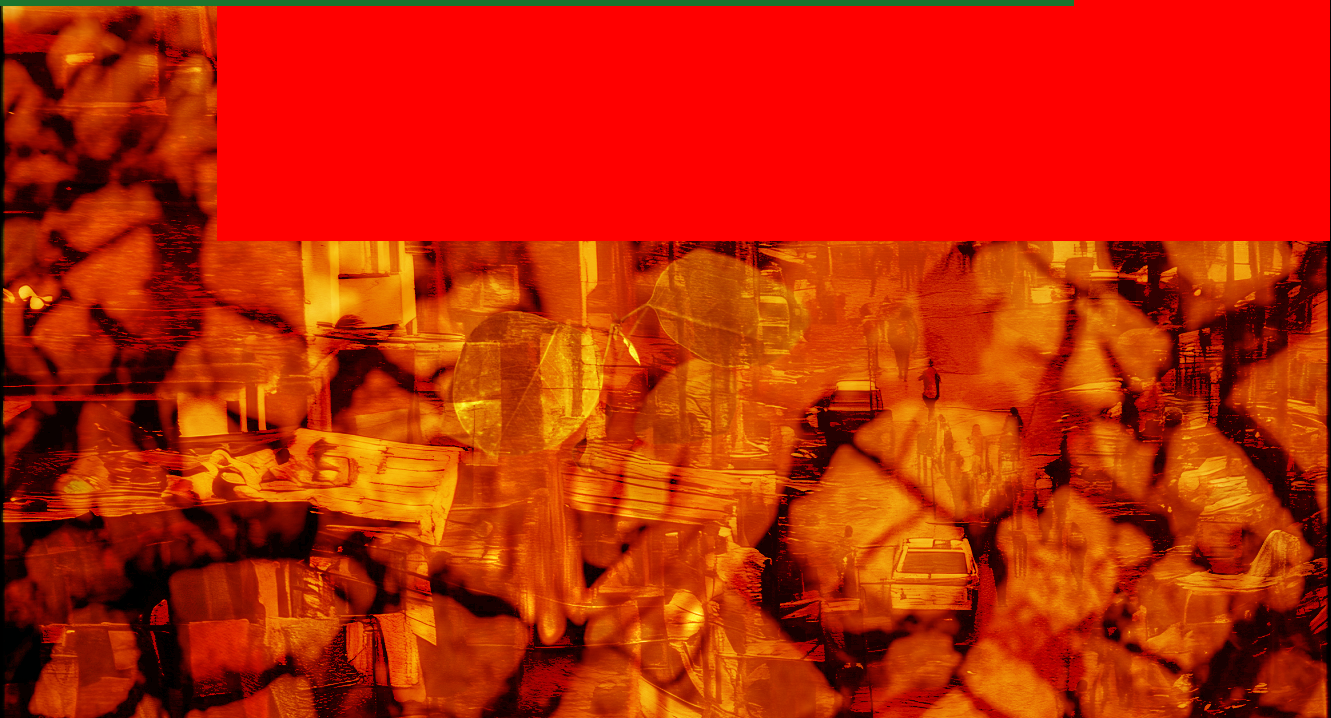
SDG 13, is concerned with taking an urgent action to combat climate change and its impacts on the globe. This involves a comprehensive approach to limit global warming, strengthen countries' resilience to climate-related hazards, and integrate climate action into national policies. Key aspects include but are not limited to: i) reducing greenhouse gas (GHG) emissions to limit global warming to well below 2°C, with an aim of 1.5°C, compared to pre-industrial times; ii) building resilience and adaptive capacity to climate-related hazards and natural disasters; iii) mobilising financial resources to support climate action, particularly in developing countries; iv) raising public awareness and improving education on climate change issues as well as integrating climate change measures into national policies, strategies, and planning.

This section presents the following paper:

1. **"Trade and Climate Change in Uganda" by Peter Babyenda and Alice Nalweera Trade and Climate Change in Uganda."** *Peter Babyenda* and Alice Nalweera

Trade and Climate Change in Uganda

Peter Babyenda and *Alice Nalweera*

Introduction

Uganda's vulnerability to climate change is particularly acute due to its landlocked geography and dependence on climate-sensitive sectors such as agriculture. Changes in rainfall and temperature have already disrupted agricultural exports, notably coffee. Furthermore, the emerging trade regulations such as the European Union's Carbon Border Adjustment Mechanism (CBAM), pose future challenges for Uganda's carbon-intensive exports. This study, therefore, investigates the impact of climate change on Uganda's trade dynamics from 1990 to 2023, employing dynamic Auto-Regressive Distributive Lag (ARDL) simulations and Kernel-based Regularised Least Squares (KRLS) models. By empirically examining the relationship between climate variables and trade performance, the study aims to inform policy interventions for building trade resilience and ensuring long-term sustainability in the face of climate change.

Findings

Based on the modified gravity model, the findings reveal that temperature and precipitation variability significantly reduce Uganda's net trade performance, especially in the long run largely due to disruptions in agriculture and infrastructure. Carbon emissions initially support the net trade growth by reflecting industrial expansion but exert negative long-term effects due to compliance costs and environmental constraints. Manufacturing value added, logistics performance, GDP per capita, and real exchange rate depreciation consistently enhance trade balance, emphasising the role of industrialisation, efficient infrastructure, and economic resilience.

Conclusion

The results underscore the vulnerability of Uganda's trade to climate variability and the importance of adaptive measures. Policy recommendations include investing in climate-resilient infrastructure, promoting green manufacturing, and integrating climate-smart agriculture into trade strategies. Additionally, leveraging short-term gains from industrial growth should be aligned with sustainable and low-carbon development pathways. The study contributes to the limited empirical literature on climate-trade interactions in East Africa and provides actionable insights for strengthening Uganda's trade sustainability in the face of increasing climate risks.

SDG 16
Peace, Justice and Strong Institutions

SDG 16 is concerned with promoting peaceful and inclusive societies, providing access to justice for all, and building effective, accountable, and inclusive institutions at all levels. This goal is crucial for sustainable development as it addresses issues like reducing violence, protecting human rights, fostering the rule of law, and combating corruption, bribery, and illegal flows. The key aspects of this goal are: i) considerably reducing all forms of violence and related deaths, including child abuse and trafficking; ii) promoting the rule of law and ensuring equal access to justice for everyone; iii) developing effective, accountable, and inclusive institutions at all levels that are responsive to the needs of their people; iv) ensuring responsive, inclusive, and representative decision-making, and strengthening participation in global governance, and v) reducing corruption and bribery, and combating organised crime and illicit financial and arms flows.

Under this goal, the following papers are presented:

1. **The Likelihood of Conviction: Evidence from an Econometric Analysis of Uganda's Anti-Corruption Court Cases.** *John Bosco Oryema, John Bosco Nnyanzi, and Nicholas Kilimani*

2. **Exclusion of Fatherless Children from Birth Registration & National Identity Systems in Uganda.** *Elizabeth Nansubuga*

The Likelihood of Conviction: Evidence from an Econometric Analysis of Uganda's Anti-Corruption Court Cases

__John Bosco Oryema__, John Bosco Nnyanzi, and Nicholas Kilimani

Introduction

Corruption remains one of the greatest impediments to sustainable economic growth and good governance in developing countries. It distorts resource allocation, erodes public trust, and undermines institutional performance. Uganda, like many sub-Saharan African economies, continues to grapple with corruption despite extensive reforms. To strengthen accountability and judicial efficiency, Uganda established the Anti-Corruption Court (ACC) in 2008 as a specialised division of the High Court. However, persistent questions remain regarding the effectiveness and consistency of the Court's outcomes. The variation in conviction rates, perceived political interference, and uneven prosecutorial success suggest deeper institutional and procedural issues. This study examines the likelihood of conviction in Uganda's Anti-Corruption Court, focusing on the influence of case type, characteristics of the accused, prosecutorial strength, and judicial attributes.

The study draws on the deterrence theory, which argues that the probability and severity of punishment influence incentives for corruption. In contexts where conviction probabilities are low, deterrence is weak, and corruption thrives. Other scholars further emphasise that judicial independence and institutional integrity are essential for effective anti-corruption enforcement.

Empirical studies show that conviction rates are often constrained by weak legal systems and selective enforcement. In Uganda, some studies identify political interference and prosecutorial inefficiencies as major obstacles. Yet, few studies have quantitatively analysed what drives conviction outcomes within Uganda's Anti-Corruption Court. This study bridges that gap by applying econometric analysis to judicial data to identify institutional and procedural determinants of conviction.

Despite institutional innovations such as the ACC, the Inspectorate of Government, and the Directorate of Public Prosecutions, Uganda continues to face recurring corruption scandals. The persistence of high-profile acquittals and the perceived protection of politically connected offenders raise doubts about the impartiality of the justice system. The policy question therefore is whether judicial and institutional factors explain variations in conviction outcomes, and what reforms are needed to improve enforcement credibility and deterrence.

The study aimed to empirically assess the determinants of conviction within Uganda's Anti-Corruption Court. Its specific objectives were to: (i) examine the

effect of case type on conviction probability; (ii) analyse how the characteristics of the accused influence judicial outcomes; and (iii) evaluate the impact of prosecution and judicial factors on conviction likelihood.

Methods

The study employed a cross-sectional design using data extracted from 105 judgments delivered by the Anti-Corruption Court between 2010 and 2022. Each case was coded by offense type (abuse of office, embezzlement, money laundering), accused person's employment category (public, private, political), the number of prosecution witnesses, and judicial characteristics (gender and experience of the presiding judge). A binary logistic regression model was estimated, where the dependent variable was conviction (1 = convicted, 0 = acquitted). The model tested how institutional and procedural factors influenced conviction likelihood. Robustness checks, including multicollinearity diagnostics and specification tests, were performed to ensure reliability.

Findings

The analysis revealed significant variation in conviction probabilities across case types and institutional characteristics. Relative to abuse of office, the probability of conviction was lower for embezzlement and money laundering cases, suggesting that evidentiary complexity in financial crimes reduces the likelihood of conviction.

The occupational status of the accused also mattered. Individuals employed in the public or private sectors faced higher conviction probabilities than those holding political office, implying that political shielding may influence judicial outcomes.

Judicial attributes had a pronounced effect. Female judges were found to be more likely to convict than their male counterparts, possibly reflecting differences in judicial behaviour and adherence to procedural rigor. Moreover, greater judicial experience significantly increased the likelihood of conviction, indicating that expertise enhances the ability to assess complex corruption cases.

Contrary to expectations, the number of prosecution witnesses did not significantly influence conviction outcomes, implying that the quality rather than quantity of evidence drives judicial decisions. These results highlight the interplay between institutional structures, individual discretion, and procedural rigor in shaping anti-corruption enforcement effectiveness.

Conclusion

This study provides the first systematic empirical analysis of conviction determinants in Uganda's Anti-Corruption Court. It demonstrates that case type, occupational status of the accused, and judicial characteristics significantly influence conviction probabilities, while prosecution strength measured by witness count does not.

The findings underscore the importance of institutional and procedural reforms in improving the credibility of anti-corruption enforcement. By enhancing judicial independence, prosecutorial quality, and transparency, Uganda can reinforce the rule of law as an essential pillar of Vision 2040 and the National Development Plan IV. The study offers broader lessons for developing countries seeking to strengthen judicial integrity and anti-corruption enforcement as a foundation for inclusive economic transformation.

Exclusion of Fatherless Children from Birth Registration & National Identity Systems in Uganda

Elizabeth Nansubuga

Introduction

Uganda operationalized national legal identity systems, following the Registrations of Persons Act (Kumar & Saikia), which framework also revitalized civil registration (birth and death registration) and vital statistics and repealed the Births & Death Registration Act – Chapter 309 (1973). National identification and civil registration systems are critical for protecting each individual's human rights and facilitating diversity, inclusion and equality in accessing the benefits of civil registration systems including access to public services (United National General Assembly, 2015).

Exclusion of "fatherless" children from birth registration processes leads to ramifications in their ability to obtain national identification. Often, children born to unknown fathers or to women who may not have information related to their children's paternal side or cannot access copies of their fathers' national Identity cards are often denied, delayed, or hindered from national identity and birth registration processes. Effective civil registration systems in Uganda and elsewhere have been found to enhance access to public/ social services such as education and health. Using an innovative human rights approach, the research seeks to explore the ethical and human rights implications surrounding exclusion of "fatherless" children in Uganda.

Objectives:

- To document/ conduct a situational analysis of the ethical and human rights issues associated with legal national identity registration and birth registration systems in Uganda.

- To explore the ethical and human rights issues associated with legal national identity registration and birth registration of "fatherless" persons in Uganda.

- To examine the gap between policy and implementation of birth and national identity registration processes.

- To formulate policy recommendations for inclusion of "fatherless" children in the legal national identity and birth registration systems in Uganda.

Data & Methods

These findings presented in this work are majorly based on primary qualitative data collection methods. These include desk review of legal frameworks, policies and documents on population/ civil registration, focus group discussions with young persons (boys and girls), in depth interviews of fatherless children and key informant interviews with a wide selection of interdisciplinary stakeholders, in addition to engagements with civil society organizations. Data has been collected from two districts in Central Uganda – Kampala (capital city) and Mukono (sub-urban district). Only persons above 18 years were considered for interviews. Ethical considerations were taken into account. Qualitative data analysis was done using Atlas-ti, based on thematic and content analysis. Triangulation of research findings from the various methods was done.

Findings

The exclusion of fatherless children from birth and national ID systems has far reaching ethical, human rights and developmental implications. Overall, it perpetuates inequality, legal uncertainties, social stigma and impediment to social services as further explained below.

- Lack of Legal Identity: Exclusion of these children denies them a sense of identity, belonging and equal standing in society.

- Social Stigma: Exclusion of these children perpetuates social stigma and reinforces traditional family and patriarchy norms. This may contribute to marginalization of fatherless children, and single parent families.

- Impediment of access to social services due to lack of registration documents. These children are unable to enjoy the full benefits arising from possession of a national ID such as voting rights, employment, social protection programs, banking services and access to mobile phone services.

Recommendations

These recommendations aim to promote a more inclusive, efficient and rights based approach to population registration in Uganda under the purview of NIRA.

- There is need for legal reforms in governance and implementation of Population registration systems (Civil Registration & Vital Statistics) particularly the Registration of Persons Act (ROPA) 2015.

- NIRA should develop and implement inclusive policies that recognize diverse family structures and modern/ artificial reproductive technologies, and ensure that no child is 'left behind' or excluded from birth and national ID registration systems based on parental status specially patriarchy related context of father's documentation.

- Collaborate with civil society organizations working in child welfare, human rights, family advocacy, to address registration challenges faced by marginalized and vulnerable populations such as fatherless children, children born of war/ those in conflict affected areas, street children, children born to single mothers and absentee fathers.

Conclusion

Exclusion of "fatherless" children from birth registration processes leads to ramifications in individual's human rights. Exclusion and marginalization in the Uganda's registration systems have diverse ethical and human rights implications which have to be addressed as a means of addressing diversity, inclusion and equality in population registers and civil registration systems in Uganda. Effective civil registration systems in Uganda and elsewhere have been found to enhance access to public/ social services.

SDG 17
Partnerships for the Goals

SDG 17 is about strengthening the means of implementation and revitalising the global partnership necessary to achieve the other 16 SDGa. It emphasises cooperation and resource mobilisation through actions like enhancing international support for developing countries, promoting equitable trade, and fostering access to science, technology, and information to create a framework for global collaboration on sustainable development. The core of SDG 17 is the idea that achieving the other SDGs (which address poverty, climate, health, etc.) requires a global partnership involving governments, civil society, the private sector, and other actors working together.

The goal further focuses on mobilising financial resources for developing countries, promoting sustainable investment, and encouraging countries to fulfil their official development assistance (ODA) commitments. Further, SDG 17 promotes improved and equitable trade practices and coordinated investment initiatives to support sustainable development across borders. The goal addresses systemic issues within the global economy, including macroeconomic stability and fair governance, to ensure a framework for sustainable development.

Under this goal, this section presents the following papers:

1. "Unlocking Superior Export Performance: The Synergetic Moderation of Knowledge Absorptive Capacity and Supply Chain Agility for Technology Orientated Businesses." *Zaina Nakabuye*

2. **Cultural Dynamics and Digital Strategies in Global Academic Collaborations: Enhancing Service Learning using the Marketing Mix in the Context of Makerere University, Uganda and EBS University, Germany**

3. "Impact of the AfCFTA on Uganda's Trade with the Rest Africa: An Interrupted Time Series Analysis." *John Bosco Asiimwe, Steven Katende and Claire Ashaba*

Unlocking Superior Export Performance: The Synergetic Moderation of Knowledge Absorptive Capacity and Supply Chain Agility for Technology Orientated Businesses

Zaina Nakabuye

Introduction

Poor export performance is a distinct problem for numerous nations globally. Correspondingly, Uganda clearly has very low exports. In 2022 Uganda fetched in thousands of USD 3,577,444; in 2023, she fetched USD 6,305,023 and in 2024, she fetched 8,039,344. This is still low for a country like Uganda that is well endowed with minerals and excess agricultural produce that are left to rot in fields. Furthermore, the exports remain low and concentrated in the EAC region, accounting for 42% of the exports with limited exploitation of the opportunities offered by other markets such as AfCFTA (National development plan NDPIV,2025). Since SMEs take a large percentage of exporters in Uganda, this study examined technology orientation coupled with the double moderation of knowledge absorptive capacity and supply chain agility as moderators of export performance of SME exporters since these could be the missing part of the puzzle.

The study purposed to assess the relationship between technology orientation and export performance. In particular, the study examines the double moderating role of supply chain agility and knowledge absorptive capacity between technology orientation and export performance.

Method

The study adopted a quantitative research design. It frames hypotheses from the literature review. These hypotheses are tested using structural equation modelling with data collected from 231 SMEs in Uganda. Data was analysed using SPSS and Smart PLS 4.9.

Findings

The study findings reveal that technology orientation and export performance have a positive relationship. Supply chain agility and knowledge absorptive capacity jointly moderate technology orientation and export performance.

Conclusion

The main objective of this study was to investigate the effect of technology orientation on export performance and the double moderating role of knowledge absorptive

capacity and supply chain agility. Depicting from the dynamic capabilities (DC) theory, it can be established that technology orientation, knowledge absorptive capacity and supply chain agility contribute positively to the export performance of SMEs in Uganda. The study stresses the importance of SMEs adopting new technologies and promoting knowledge sharing among employees as well as quick response to customer needs to enhance export volumes.

The study proposes that Ugandan SMEs should invest in the latest technology, respond quickly to customer needs, research and share new knowledge within the firm and implement it in the daily running of the business. The study recommends that managers of Ugandan SMEs should use the latest technology in production, marketing, logistics and supply chain management which will enable them to sense the trends in business leading to higher levels of export performance.

Cultural Dynamics and Digital Strategies in Global Academic Collaborations: Enhancing Service Learning using the Marketing Mix in the Context of Makerere University, Uganda and EBS University, Germany

Proscovia Mayanja Katumba and *Anthony Tibaingana*

Introduction

Global Service Learning (GSL) offers a bridge for North-South collaborations, fostering cultural exchange, reciprocal growth, and sustainable social impact. As technology advances, integrating digital strategies with culturally responsive approaches enhances the effectiveness of international SL initiatives. Despite opportunities, challenges like digital divides and cultural disparities threaten success, necessitating deliberate, community-centred planning for meaningful engagement.

Research underscores SL's transformative impact on attributes such as cultural awareness, leadership, and critical thinking. Yet, tensions remain around short-term involvement, paternalism, and inequities between the global North and South. Effective GSL requires balancing community needs with academic goals, fostering mutual respect, and leveraging innovative digital tools to support sustainable, equitable partnerships.

This paper examines how cultural factors shape digital strategies in international academic collaborations, specifically between Makerere University, Uganda, and EBS University, Germany. It explores the role of the marketing mix in improving service learning (SL) programs, emphasising the importance of cultural sensitivity, digital innovation, and sustainable partnerships. Findings reveal that integrating these elements fosters skills such as intercultural competence, community engagement, and digital marketing, essential for addressing global societal challenges.

Methods

Using qualitative methods, data was collected through interviews with students involved in the Makerere-EBS collaboration. Purposive sampling targeted three cohorts, with data analysed via Atlas.ti software to identify themes related to cultural influence, digital engagement, and collaboration experiences, ensuring rich, participant-driven insights.

Findings

Participants reported enhanced knowledge co-creation, intercultural understanding, and digital marketing skills. GSL fostered community reciprocation, changing

perceptions and promoting social responsibility. Digital tools like Zoom and WhatsApp bridged geographical gaps, though infrastructural disparities and digital illiteracy remain barriers. Skills such as reflection, project management, and dialogue were central to successful engagement, underscoring the importance of trust, infrastructure, and cultural sensitivity.

The study highlights that cultural awareness and digital fluency are vital for effective GSL. Strategic application of the marketing mix focusing on product relevance, promotion, partnership, and infrastructure can strengthen collaboration. Addressing digital divides and fostering mutual respect are essential for sustainable, impactful international partnerships that enhance skills and community benefits.

Recommendations

- Prioritise community needs and ensure active community involvement in project planning.

- Review and promote curricula that embed SL and digital literacy.

- Invest in digital infrastructure and training, especially in the South, to bridge connectivity gaps.

- Use online platforms creatively for content sharing, reflection, and engagement.

- Foster continuous dialogue, trust, and cultural intelligence in virtual collaborations.

Impact of the AfCFTA on Uganda's Trade with the Rest Africa: An Interrupted Time Series Analysis

Asiimwe John Bosco, *Katende Steven and Ashaba Claire*

Introduction

Theoretical models on international trade suggest that regional trade agreements, such as the AfCFTA, can enhance trade flows among member countries by reducing trade barriers both tariff and non-tariff, harmonising trade policies, and promoting economic integration. Under the AfCFTA, Uganda could capitalise on its comparative advantage in agricultural products, expanding its market access within. Moreover, the new trade theory and new economic geography models (Krugman, 1991) emphasise the role of economies of scale, market size, and reduced transportation costs in fostering regional trade. By lowering tariff and non-tariff barriers, the AfCFTA is expected to reduce transaction costs, making intra-African trade more competitive. Uganda, as a landlocked country, stands to benefit from improved market access, reduced tariffs, and regional infrastructure development initiatives spurred by the AfCFTA.

There is limited empirical evidence on the specific impacts of the AfCFTA on individual countries' trade balances, particularly for smaller economies like Uganda. Most studies have focused on theoretical predictions and macroeconomic models, with few assessing the actual post-implementation effects of the AfCFTA on trade flows. Moreover, there is limited research on how the AfCFTA has affected specific trade variables such as exports, imports, and trade balances in Uganda and other smaller African economies.

This study sought to fill the gap by conducting an empirical assessment of Uganda's trade balance with the rest of Africa using an Interrupted Time Series (ITS) analysis. By analysing monthly trade data from January 2015 to July 2024, this research paper provides new insights into the level and slope changes in Uganda's exports, imports, and overall trade balance following the AfCFTA's implementation.

The study contributes to the broader understanding of how regional trade agreements can influence trade dynamics in Africa and offer policy recommendations for optimising Uganda's trade performance under the AfCFTA framework. AfCFTA has garnered substantial academic and policy attention due to its potential to transform intra-African trade dynamics and stimulate economic development across the continent. However, establishing the impact of such an intervention is highly relevant to direct discourse on the importance of AfCFTA.

The paper sets out to establish the impact of AfCFTA on Uganda's exports and imports.

Methods

The study uses monthly data on the value Uganda's exports and imports (US $) to the rest of Africa, from January 2015 to July 2024. The data were sourced from national statistics databases such as the Uganda Bureau of Statistics (UBOS) and Bank of Uganda (BOU) statistics department. The time series captures both pre-intervention (before AfCFTA) and post-intervention periods, allowing for the assessment of changes in export trends. To capture these changes, the following components are included in the model:

Where:

- represents Uganda's monthly (exports or imports) to the rest of Africa at time ,

- is the time variable (in months) that captures the underlying trend in exports or imports before the AfCFTA intervention.,

- is a dummy variable that takes the value of 0 before January 2021 (pre-intervention) and 1 from January 2021 onwards (post-intervention), capturing the immediate level change in exports after the implementation of AfCFTA.

- is an interaction term between time and the post-intervention period, representing the slope change (or change in the growth rate of exports/ imports) after the AfCFTA's implementation is the error term.

(Intercept): The baseline level of Uganda's exports/ imports to the rest of Africa before AfCFTA. (Pre-intervention trend): The rate of growth (or decline) in Uganda's exports/ imports to the rest of Africa before the AfCFTA. (Immediate level change): The instantaneous change in the level of exports/ imports following the implementation of AfCFTA in January 2021 and (Slope change): The change in the growth rate of exports/ imports after AfCFTA was implemented.

Findings

Findings reveal an immediate and statistically significant increase in Uganda's exports to Africa, accompanied by a sustained positive growth trend post-AfCFTA. Conversely, while imports initially declined following the intervention, they subsequently exhibited a strong growth trend, ultimately outpacing exports. This widening disparity suggests a negative impact on Uganda's trade balance with Africa in the post-AfCFTA period, potentially underscoring the challenges of increased import competition.

Conclusions

The findings show that AfCFTA has a positive impact on increasing Uganda's exports to Africa. The results emphasise the need for Uganda to diversify its export portfolio and strengthen its industrial capacity to capitalise fully on the AfCFTA's opportunities while mitigating trade imbalances.