



Network for Education &
Multidisciplinary Research Africa
(NEMRA)

THE 3RD NEMRA ALL-AFRICA MULTIDISCIPLINARY RESEARCH CONFERENCE 2026

THEME

**Science, Innovation, and Research
for Holistic Development: An ATMS
Framework for Transformative
Progress**



**28th – 29th
July 2026**



Makerere University, School of
Public Health Auditorium next
to University Eastern Gate

BOOK OF ABSTRACTS



The 3rd All African Multidisciplinary Research Conference

Theme:

**Science Innovation and Research for Holistic
Development: An ATMS framework for
Transformative Progress**

Date:

July 28th and 29th 2026

Venue:

Makerere University School of Public Health Auditorium

BOOK OF ABSTRACTS

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Guest of Honour



Hon. Eng. Jonard Asiimwe Akiiki
Minister for Science, Technology
and Innovation in the Office of
the President of Uganda

Hon. Eng. Jonard Asiimwe Akiiki is the Minister for Science, Technology and Innovation in the Office of the President of Uganda, appointed to Cabinet in May 2026. In this role, he provides strategic leadership for Uganda's science, technology, and innovation agenda, with a focus on accelerating research commercialization, industrialization, technology transfer, and innovation-driven economic transformation in line with the country's development priorities.

An engineer by profession, Hon. Asiimwe has extensive experience in the mining, petroleum, infrastructure, and project management sectors. Before joining Cabinet, he served in engineering and project development roles within both the public and private sectors and held leadership positions in professional engineering organizations. As Minister, Hon. Asiimwe has championed stronger partnerships between government, universities, research institutions, and industry to translate scientific research into commercially viable products and services. He advocates for innovation ecosystems that promote value addition, indigenous manufacturing, entrepreneurship, and the commercialization of research to support Uganda's socio-economic transformation and Vision 2040 aspirations.

Keynote Speaker



Prof. Pamela Mbabazi

Executive Chairperson of the
National Planning Authority (NPA)

Prof. Pamela Mbabazi is a distinguished Ugandan academic, development policy expert, and public administrator. She currently serves as the Executive Chairperson of the National Planning Authority (NPA), where she provides strategic leadership in Uganda's national development planning and serves as a member of Cabinet and Advisor to the President.

Prof. Mbabazi holds a Bachelor of Arts in Economics and Political Science from Makerere University, a Master of Arts in Development Studies from the University of Leeds (UK), a Master of Science in Development Planning and Management from Kwame Nkrumah University of Science and Technology (Ghana), and a PhD in Development Studies from Mbarara University of Science and Technology (MUST).

She has had an illustrious academic career at Mbarara University of Science and Technology (MUST), where she served as Dean of the Faculty of Development Studies, Deputy Vice Chancellor, and Professor of Development Studies. She also served as Head of Research at the African Union's Institute for Peace and Security Studies at Addis Ababa University and has held prestigious international research fellowships and visiting professorships.

Keynote Speaker



Prof. Rose Jennifer Aduwo
Dean, School of Distance and
Information Technology at
Uganda Management Institute
(UMI)

Prof. Rose Jennifer Aduwo is a distinguished Ugandan academic, researcher, and higher education leader with extensive experience in business, management, and entrepreneurship. She serves as a Professor and has held several academic leadership positions, contributing significantly to teaching, research, graduate supervision, and institutional development. She is recognized for her commitment to advancing research excellence, innovation, and capacity building within higher education in Uganda and the region.

Prof. Aduwo's scholarly interests span entrepreneurship, strategic management, innovation, organizational development, and business education. She has supervised numerous postgraduate students and published research in her areas of expertise, while actively participating in national and international academic conferences, research collaborations, and policy discussions aimed at strengthening enterprise development and higher education.

Throughout her career, Prof. Aduwo has championed the integration of research, innovation, and entrepreneurship into university education. She continues to mentor emerging scholars and professionals, advocating for evidence-based decision-making, sustainable enterprise development, and stronger linkages between academia, industry, and government to foster socio-economic transformation.

CONFERENCE OPENING REMARKS



Prof. Mukadasi Buyinza
Academic Registrar of Makerere University

Prof. Mukadasi Buyinza is a distinguished Ugandan scholar, Professor of Forestry Resource Economics, and higher education administrator at Makerere University. He currently serves as the Academic Registrar of Makerere University, providing leadership in academic administration, examinations, admissions, research coordination, postgraduate training, and university ceremonies.

Prof. Buyinza holds a PhD in Forest Management from Gadjah Mada University, Indonesia, and has undertaken further professional and postdoctoral training in natural resources management and environmental governance. He rose through the academic ranks at Makerere University to become a Full Professor in 2010.

With over two decades of experience in university teaching, research, and leadership, Prof. Buyinza has contributed extensively to forestry economics, environmental sustainability, biodiversity conservation, natural resource governance, and community livelihoods. He has supervised numerous postgraduate students at Master's and PhD levels, mentored emerging researchers, and participated in several national and international research collaborations.

Before his current role, he served as Director of the Directorate of Research and Graduate Training (DRGT), Makerere University, where he provided strategic leadership in research development, graduate training, research funding, and institutional research partnerships. He has also served in other university leadership roles, including Acting Deputy Vice Chancellor (Academic Affairs).

Prof. Buyinza has been involved in numerous research initiatives and professional organizations, including leadership roles in national and international research networks. His work continues to promote excellence in research, innovation, graduate training, and the use of knowledge to address societal and environmental challenges.

SPEECH BY THE CONFERENCE CHAIR

Theme: "Science, Innovation and Research for Holistic Development"



Martin Muhereza (PhD)
Conference Chair and
Coordinator, Research and
Publications NEMRA

Distinguished Guest of Honour, Keynote Speakers, distinguished Researchers and Scientists, Ladies and Gentlemen,

It is my singular honour and privilege to welcome you all to the 3rd All Africa Conference of the Network of Education and Multidisciplinary Research Africa (NEMRA). On behalf of the Conference Organizing Committee and the entire NEMRA family, I extend our warmest greetings and heartfelt appreciation to each one of you for honouring our invitation and joining us at this important scientific gathering.

This conference brings together scholars, policymakers, practitioners, innovators, industry leaders, development partners, and students from across Africa and beyond to deliberate on one of the most pressing imperatives of our time: how science, innovation, and research can transform our societies and contribute to holistic development. Today's gathering is more than an academic event; it is a platform for generating ideas, building partnerships, sharing evidence, and developing practical solutions to Africa's development challenges.

Science provides us with knowledge, Research generates evidence, Innovation transforms ideas into practical solutions and together, they become powerful instruments for sustainable and inclusive development. Our conference theme, "Science,

Our conference theme, "Science, Innovation and Research for Holistic Development," therefore comes at a critical and opportune time.

As researchers, we bear a responsibility not merely to produce publications but to generate knowledge that addresses real societal problems. Research should not remain confined to journals and libraries; it should influence policy, inform practice, drive innovation, and improve lives.

This conference provides an opportunity to reflect on Africa development challenges and identify practical pathways for strengthening Africa's research and innovation ecosystem. Today's conference demonstrates that meaningful solutions emerge when diverse perspectives converge.

I encourage all participants to engage actively throughout the conference attend sessions beyond your own discipline, ask challenging questions, share your experiences build new research collaborations and mentor emerging scholars.

Let me take the opportunity to appreciate the relentless efforts, time, and skills that have been invested in this conference by the conference organising team led by Dr. Apophia Agiressasi.

The team that started conference meetings from the beginning of this year up to today your reward is great in heaven. Lastly but not least I recognise the funding that has come in handy from our partners especially National Council for Higher Education and Bishop Stuart University.

I wish you fruitful deliberations, meaningful networking, stimulating discussions, and a successful conference.

Martin Muhereza (PhD)
Conference Chair and Coordinator,
Research and Publications NEMRA

MANAGING DIRECTOR'S SPEECH



Karlmax Rutaro (PhD)
Managing Director
Network for Education and
Multidisciplinary Research Africa
(NEMRA)

The Chief Guest, Representatives of the Uganda National Council for Science and Technology (UNCST), Officials from Government Ministries, Departments and Agencies, Distinguished Keynote Speakers, Researchers, Development Partners, Ladies and Gentlemen. Good morning!

It is my great honour and privilege to welcome you all to the 3rd NEMRA All-Africa Multidisciplinary Research Conference 2026. On behalf of the Secretariat, and the entire membership of the Network for Education and Multidisciplinary Research Africa (NEMRA), I sincerely thank you for joining us today. Your presence demonstrates our shared commitment to advancing research, innovation, and sustainable development across Africa.

I extend my heartfelt appreciation to our partners, especially the Uganda National Council for Science and Technology (UNCST), Bishop Stuart University, and Makerere University, whose continued support has made this conference possible. I also thank our keynote speakers, reviewers, presenters, sponsors, volunteers, and the organizing committee for their dedication and hard work.

This year's conference is held under the theme "Science, Innovation, and Research for Holistic Development: An ATMS Framework for Transformative Progress." The theme reminds us that Africa's challenges are interconnected. They require multidisciplinary solutions, innovative thinking, and strong partnerships between academia, government,

industry, and communities. The ATMS Framework calls upon us to ensure that research goes beyond academic publications. Our research should inform policy, inspire innovation, strengthen industries, improve healthcare and education, modernize agriculture, protect the environment, and ultimately improve people's lives. In short "Research has value only when it creates impact".

Over the next two days, we shall share knowledge across ten broad thematic areas covering artificial intelligence, agriculture, tourism, energy, finance, health, climate change, entrepreneurship, education, and value addition. Though diverse, these themes are united by one objective i.e., generating practical solutions that contribute to Africa's sustainable development.

I am particularly pleased by the diversity of participants gathered here today. Researchers, policymakers, private sector representatives, ECRs, and innovators have all come together because we recognize that no single discipline or institution can solve today's complex challenges alone.

I congratulate all authors whose abstracts were accepted for presentation. Your work reflects the growing strength of African scholarship and our commitment to addressing real-world problems through quality research. I encourage you to use this conference to exchange ideas, receive constructive feedback, and build partnerships that continue long after this conference.

As we deliberate, let us continually ask ourselves one important question: How will our research improve people's lives? Our success should be measured not only by publications, but by stronger institutions, healthier communities, sustainable businesses, evidence-based policies, and inclusive economic growth. That is the true purpose of research.

As NEMRA continues to grow, we remain committed to promoting multidisciplinary research, strengthening collaborations, supporting young researchers, encouraging innovation, and ensuring that research contributes meaningfully to Africa's development agenda.

Ladies and Gentlemen, Africa's greatest resource is not only its natural wealth but also its people, its knowledge, and its capacity to innovate. Let this conference be a platform for bold ideas, meaningful dialogue, and lasting partnerships that will shape the future of our continent.

Once again, I thank all our partners, sponsors, speakers, presenters, and participants for making this conference possible.

I wish you fruitful discussions, productive networking, and a successful conference.

Thank you very much. God bless you all.

For God and My Country.

Karlmax Rutaro, Ph. D.

Managing Director

Network for Education and Multidisciplinary Research Africa (NEMRA)

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MCs: Dr. Arinaitwe Rugyendo, Csl. Yahaya Hadijjah
Mr. Collins Tumusiimee

Introduction

The Network for Education and Multidisciplinary Research Africa (NEMRA), an inter-university network of postgraduate research students, academics, and practitioners engaged in multidisciplinary research for and about Africa, is partnering with Uganda National Council for Science and Technology (UNCST), to host the 3rd Annual NEMRA Research Conference.

The conference will be anchored in Uganda's ATMS framework namely Agro-industrialization, Tourism development, Mineral development and beneficiation, and Science, Technology and Innovation (including ICT), with key stakeholders from government, academia, industry, and development partners within these sectors presenting peer-reviewed papers and policy-oriented research. The conference discussions will emphasize value addition, import substitution, Industry, space science, and the pathogen economy as critical drivers of transformation.

Target Audience

The conference will bring together a diverse group of stakeholders including.

1. Policymakers and Government Officials
2. Industry Leaders and Entrepreneurs
3. Professional businesses
4. Research Regulators
5. Innovators and Startup Founders
6. Research and Innovation funders
7. Researchers and Academics from all disciplines
8. Students and Early Career Researchers
9. Representatives from Civil Society Organizations

Day One Program

Tuesday 28 th July 2026				
Time	Session	Activity	Speaker	
08:00 to 08:30am	Registration and Networking	Registration and Networking Registration desk open		
08:30 a.m to 09:30am	Plenary Welcome Remarks	Overview of Conference Objectives	Dr. Martin Muhereza, Chair, NEMRA Conference 2026 Local Organizing Committee, Uganda Management Institute (UMI)	
		Conference Opening Remarks	Prof. Mukadasi Buyinza, Academic Registrar Makerere University	
		Institutional Opening Remarks	Dr Karlmax Rutaro, Managing Director, NEMRA Dr. James Kisaale, Executive Secretary UNCST	
09:30am - 10:30am Opening Addresses				
Auditorium	Session Chair	Presenter		Discussant
	Mr. Patrick Mutabwire	Prof. Pamella Mbabazi Executive Chair National Planning Authority	Keynote Address: NPA	Discussions
		Dr. Steven Sebbale (UNCST)	Building an Innovation Ecosystem that Delivers Transformation: Lessons from Uganda's STI Infrastructure Landscape study	Discussions
Time	Session	Activity	Speaker	
10:30am-11:00am	Official Opening and Group Photo	Remarks by the Guest of Honour	Hon Eng. Jonard Asiimwe Akiiki Minister of Science Technology and Innovation in the office of the President	
		Photo session		

11:00am- 01:00 pm				
Auditorium (Climate Change and Health)				
	Chair	Presenter	Title of Presentation	Discussant
	Dr. Arinaitwe Rugyendo	Winnie A. Okeyo Rosemary Bateta, Paul Mireji	Population genetics insights to inform tsetse fly control in Kenya	
		Ajidiru Loyce Philister	Her Pen, our Hope: Women Rewriting Uganda's Climate Future	
		Kakundwa Naome Kyarugahe Dinah Lule Simon	Household living conditions and Environmental Sustainability: Evidence from Afrobarometer Survey Data in Uganda	Dr. Harriet Nakigozi
		Onyok John Howard	Transforming Global Health Systems through Innovation, Sustainability, and Emerging Technologies	
		Michael Ssemakula	Evaluation of Lemon Juice Egge shell Urine based bio fertiliser on growth Parameters of Tomato(<i>Solanum Lycopersicum</i>) seedlings in Kiira Wakiso district	
11:00am – 01:00pm				
Seminar Room One (Health)				
	Session Chair	Presenter	Title of Presentation	Discussant
	Dr Salaam Mujeeb	Blasio Bisereko Bwambale	Influence of Terrestrial and Wetland Ecosystems on Species Occurrence of Aedes and Culex Mosquitoes as Vectors of Arboviruses in Northern Uganda	Dr. Raymond Tumwesigye

		Winfred Naamara	Family Caregivers' Perceptions of Schizophrenia and Community Members' Attitudes Towards Patients and their Family Caregivers	
		Christine Karungi Pius Musinguzi, Bright Laban Waswa, Deo Benyumiza, Godfrey Z. Rukundo, Ronald Bahati,, Zohray M. Talib, Celestino Obua, Herbert E. Ainamani, Edith K. Wakida	Barriers, Facilitators, and early Implementation of the Mhgap-ig for Dementia Care in Rural Uganda: a Case Study of Kabale District, Southwestern Uganda	Mr. Justus Asasira
		Dr. Gad Ruzaaza	Building a Center of Excellence in One Health at Mbarara University of Science and Technology (MUST): A Situational Analysis.	
		Mr. Mahadih Kyambade, Prof. Rogers Mwesigwa, Dr. Kassim Alinda, Prof. Sulait Tumwine, Dr. Freddie Lwanga	Understanding Stakeholder Engagement for Improved Sustainability Performance of Health and Sanitation Projects in Uganda: a Qualitative Inquiry	
11:00am - 01:00pm				
Seminar Room Two (Education and Policy)				
	Session Chair	Presenter	Title of Presentation	Discussant
	Dr. Gad Ruzaaza	Simon Peter Ecodu	Cultivating Minds Within Institutional Walls: A Systematic Review of Formative Assessment Practices Shaping Learning at Bishop Stuart University.	Dr. Denis Aguma

		Anne Atuhaire	The Effect of Stakeholder Collaboration on Educational Inclusion of Children in Street Situations in Uganda: Planning and Implementation Phases	
		Wasike Aziz	A Dialect-Aware Hybrid Corpus Curation Framework (DHCCF) for Low-Resource Languages: An English–Lusoga Case Study	Dr. Elizabeth Katusiime
		Dr. Arinaitwe Enid	Reimagining Education Policy for Holistic Development: Bridging Research, Innovation and Practice in Africa Education.	
		Mpuuja Tom Mutebi	Teachers' Pedagogical Knowledge, Attitudes, and Practices as Predictors of Quality Physical Education in Lower Secondary Schools in Uganda	

01:00 pm – 02:00 pm Lunch Break

Auditorium (Artificial Intelligence and Digital Migration) 02.00 - 05.00p.m

	Session Chair	Presenter	Title of Presentation	Discussant
	Dr. Raymond Tumwesigye	Assoc. Professor Nakijoba Rosemary(PhD)	Governing Inclusive Digital Transformation: A Comparative Policy Review of Disability-Inclusive Digital Accessibility in Ugandan Higher Education	

		Jane Mercy Muthoni Kamunyi	Beyond Digital Migration: Factors Influencing the Adoption and Continued Viewership of Digital Terrestrial Television in Uganda	Dr. Gad Ruzaaza
		Naa Korkor Leeyoo Watson-Nortey	'Your Word is my Command': Exploring the Use of Language as a Rhetor-Metadiscourse Element in AI Prompts.	
		Siame Donald and Musonda Allan	Secondary School Teachers' Perceptions on integrating Artificial Intelligence in Mathematics Classrooms: a case of Three Selected Schools of Mufulira District	
		Dr. Veronica Namulondo	Exploring possibilities of Extended Reality technology use for Higher Education Access Programmes in hard-to-reach areas in Uganda: A case of Buvuma Island.	
	02:00pm – 04:30 pm			
	Seminar Room One (Tourism & Financial Inclusion)			
	Session Chair	Presenter	Title of Presentation	Discussant
	Dr. Joy Asiimwe	Kyarikunda Monica	Evaluating the Operational Performance of Community-Based Tourism Enterprises and their contribution to community Conservation outcomes around Bwindi Impenetrable National Park	Dr. Frankline Higenyi

		Walter Komaketch	Community-Based tourism and Local economic development in Uganda: Implications for Youth -employability and small-scale enterprises in Northern Uganda.	
		Betrum Namanya Bethuel Kinyanjui Kinuthia Daniel Okado Abala	FDI Productivity Fortunes? Empirical evidence from Uganda's manufacturing sector	Dr. Martin Muhereza
		Hellen Nambi	The moderating role of financial literacy in the relationship between FinTech Usage and inclusive growth among women in agribusiness in Central Uganda.	
		Dr. Nalele Kizito and Dr. Naome Kakundwa Dinah Kyarugahe Tumwebaze	University Incubation and Agribusiness Sustainability: The Mediating Role of Agribusiness Innovation in Uganda.	
Seminar Room 2	02:00pm – 05:00 pm Online Presenters (Artificial Intelligence, Health)			
Session Chair		Discussant		
	Dr. Sabastiano Rwengabo	Joshua Adekunle Osiyemi; Joan Adebomi Osiyemi Enoch Damilare Osiyemi Yetunde Regina Taiwo Utuvu Duane Uchenna-NzenwataChristian Daniel Eyop and Paul Akinniyi Akinduti	Beyond antimicrobial Resistance: Leveraging artificial Intelligence, Genomic Surveillance, Precision Diagnostics, and One Health Strategies to Combat emerging Multidrug-Resistant Pathogens in Africa	Ms. Goretti Nagawa

		Kasenge Martin	Credit Risk Management Practices and Loan Portfolio Quality in Uganda's Commercial Banks. A Survey of Selected Commercial Banks.	
		James Asiimwe	Leveraging Artificial Intelligence and Digital Innovation for Business Performance in Uganda's Dairy Value Chain	Dr. Jackline Bwire
		Destiny Ebhodaghe Ibhate, Courage Ibhate Oselumese, Israel Odeajo	Building Nigeria's First Physician-Validated Medical AI Benchmark and Guideline-Grounded Language Model: A Step Toward Context-Appropriate Clinical AI for African Health Systems	
		Jonan Bizibu	Assessment of Effects of Selected Agro - chemicals on Soil Macro Invertebrates in Sugarcane Plantations in Masindi District	Mr. Moses Tuhamé
		Jennifer Kasabiti	"I am No Longer the Same"; Mental Well-being, Intimate, and Social Experiences of Women Living with Obstetric Fistula in Uganda	
		Nabitandikwa grace Mary	Utilisation of Modern Family Planning Methods and Associated Factors Among Women of Reproductive Age in Masaka, Central Uganda	

05:00pm – 06:00 pm Evening Tea and Networking End of Day One

Day Two Program

29th, July 2026 Wednesday

Plenary 08:30 am - 10:30am Auditorium

MCs Dr. Arinaitwe Rugyendo, Csl. Yahaya Hadijjah,
Hellen Kirunda, Mr. Collins Tumusiime

Session Chair

	Dr. Moses Tuhame	Assoc. Prof. Jennifer Rose Aduwo	Keynote Address Transforming Higher Education through Technology: Catalyst for National Holistic Development	Discussions
		Ms Hellen Opolot (UNCST)	The Role of STI Regulation in Uganda's 10-Fold Growth Journey	Discussions
		Mr. Collins Mwesigwa (UNCST)	Leveraging Digital Platforms to Build an Agile and Data-Driven STI Governance System for Uganda's 10-Fold Growth Agenda	

10:30 am to 11:00 am Tea Break

AUDITORIUM 11:00am to 01:00pm (Leadership and Financial Literacy)

	Prof Stella Neema	SSP Jackson Mucunguzi	Family Structure and Community Policing Outcomes in Kampala Metropolitan South, Uganda Police and Family: Public Administration in Action	
		Ms. Agnes Sansa, Prof. Florence Muindi Kagendo (PhD), Prof. Mercy Gacheri Munjuri&, Prof. Stephen Odock Ochieng	Multigenerational Work Ethics and Organizational Performance: Evidence from Public Agencies in Uganda	

		Tom David Grace, Joseph Rwothumio, David onen	Does student financing build academic capacity? evidence from HESFB loan beneficiaries in Ugandan public universities	Dr. Barbara Kayondo
		Mr. Osborn Ahimbisibwe, Dr. Godwin Awio, Dr. Henry Mugisha, Dr. Edward Kibikyo Mukooza, Prof. Angella Napakol, Dr. Dan Ayebale.	From altruism to justice: a Christian Ethical Compensation Framework for Research Participant compensation	
		Mary Ssonko Nabacwa&Susan Acen and Aciro Rita	Male Involvement in Generating Growth Opportunities and Productivity for Women Enterprises: A case of the Uganda Women's Network Strategy	
		Watsema Baluku	Financial Literacy and Financial Inclusion among Rural Households in Uganda: The Mediating Role of Financial Self-Efficacy	
		Akinwande Segun Matthew	Indigenous Knowledge-based entrepreneurship and Business Resilience post-covid19 In Africa	

11:00am – 01:00pm : Seminar Room One

Seminar Room One (Leadership and Policy)

Session Chair	Presenter	Title of Presentation	Discussant
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	Dr. Barbara Kayondo	Mr. Okou Yaqub Patrik, Dr. Stansilus Kasozi-Mulindwa& Dr. Olobo Maurice	Beyond the Contract: a Critical Review of Public Procurement Practices and the Livelihood Security of Outsourced Women Street Sweepers in Kampala	
		Dr. Martin Muhereza	Policy Processes and Implementation in Uganda: A Critical Analysis	
		Cyprian Ssebagala	Competence Mapping and Staff Retention in Public Universities in Uganda: Evidence from Makerere, Kyambogo, and Uganda Management Institute.	Dr. Sylvia Nabasumba
		Muheesi Alex. G, Sunday, Arthur, Eton Marus& Byamukama Eliab M	Procurement Planning on Public Service Delivery in Local Governments: Evidence from a Structural Equation Modelling Analysis	
		Lynn Tar Janet Gutu and rashid Kisejjere and Reuben Magala	Towards High-Quality Text-to-Speech for Ugandan Languages	
11.00 to 01.00 p.m				
	Room Two (Health and Financial inclusion)			
	Dr. Edgar Tumwesigye	Musiime Selwano Jackson	Patient Flow and Quality of Care among Elderly Patients Attending Outpatient Clinics in Kabale and Kitagata Hospitals, Southwestern Uganda	Dr. Edgar Tumwesigye

		Eriah Kambere	Enhancing Capacities of Community Saving and Credit Groups towards improvement of Socio-Economic Livelihoods of Women in Nakivale Refugee Settlement: An Action Research	
		Samuel Arko Mensah	From Stage to Enterprise: Theatre Schools as Incubators for Creative Businesses in Ghana	
		Dr.Juliet Kyayesimira & Kussain Lukabwe	Environmental Performance of Bioplastic Films from Cassava Peel Waste: Water Absorption, Biodegradability, and Phototoxicity on Mung Beans (<i>Vigna radiata</i>)	
		Munene Denis, Tore Kipngetchi Nelson, Fridah Kanana Kinyua	Assessing the influence of rural infrastructure on market access for small-scale green gram farmers in tharaka north sub county, kenya	

01:00pm – 02:00pm Lunch Break

02:00pm – 04:00pm

Auditorium (Agriculture and Food Security)

	Session Chair	Presenter	Title of Presentation	Discussant
	Ms. Peace Tushabe	Emmanuel Behangana	Application of Random Forest Model for Milk Quality Classification and Prototype System Development in Ugandan Dairy Processing Plants	Dr. Friday Christopher
		Ssentongo Vianney	Antibiotic Residues and Associated Farm-Level Factors in Eggs from Commercial Layer Chicken Farms in Wakiso District, Central Uganda	

		Sylvia Nabasumba, Margaret Najjingo Mangheni, Johnny Mugisha and Pamela. N.Pali	Economic viability and stability of investing in farmer based seed potato production in south western Uganda	Prof. Moses Muhumuza
		Christine Aoyo Agatha Alidri, Atube Francis, Hanne Overgaard Mogensen & Okumu Charles	Gendered perceptions of green charcoal: the benefits and challenges shaping adoption of a clean cooking technology in northern Uganda	
		Dr. Edgar Tumwesigye	Relationship between land use, seasonality, hydrological conditions, and the adsorption of sulfamethoxazole, ciprofloxacin, and 17 β -estradiol onto polyethylene terephthalate microplastics in a small urban river system, Eastern Cape, South Africa	
		Murithi Evelyn Gatugi	Enhancing sustainable coffee farming in Uganda: Adoption and adoption intensity of organic farming practices among smallholder Robusta coffee farmers in Kagongo Division	
		Preeti Kumari	Rwizi Feedback Application: Empowering local communities and conservation representatives to report, verify, and act on environmental incidents	

02:00pm – 04:00pm

Seminar Room One (Climate Change)

Session Chair

Presenter

Title of Presentation

Discussant

	Dr. Apophia Agiresaasi	Dr. Friday Christopher	Climate Change Adaptation and Environmental Sustainability Through Nature-Based Solutions: Integrating Trenches, Check Dams, Agroforestry, Elephant Grass, and Star Grass for Ecosystem Restoration	Dr. Juliet Kyayesimira
		Kalenzi Rogers Runyunyuzi Amooti	Redefining Waste as a Climate-Smart Resource: insights from Gulu City Landfill through the Kalenzi Rogers Runyunyuzu Amooti Waste Resource Framework	
		Justus Asasira, Charlotte Fabri, Jo Van Caneghem, Kenneth Sibiko, Caroline Wambui, Caesar Rowland Apentiik, Tom Ogwang&, Tine Compernelle	Empowerment and perceptions of women on health effects and adoption of clean cooking technologies in urban and peri-urban Southwestern Uganda	
		Mshilla Maghanga	City Residents' Solid Waste Management Knowledge, Attitude and Practices (KAPS) and Climate Smart Innovations in Gulu City, Ugand	
		Onyok John Howard	Transforming Global Health Systems through Innovation, Sustainability, and Emerging Technologies	
		Geoffrey Mubinzi, Livingstone Ssenyonga, Twaha Kigongo, Kawaase, Francis Wasswa, Muiyiwa S, Adaramola& Maria Nantongo	Efficient Energy Use Typologies: Adoption and determinants of energy saving appliances among Ugandan households	

	02:00pm – 04:00pm			
	Seminar Room Two (Agriculture and Health)			
	Session Chair	Presenter	Title of Presentation	Discussant
	Ms. Olive Kyogabirwe	Roselyne Akatukunda, Charles, Kakuhikire Twesigye & Juliet Kyayesimira	Assessment of Phytoremediation Mechanisms of Selected Plant Species in the Removal of Lead, Cadmium, Copper and Arsenic from Contaminated Soil and Wastewater Sediments in Nakivubo Wetland, Uganda	Dr. Barbara Kayondo
		Brenda Nnenia Okpara	A Comparative Assessment of Soil Organic Carbon Stocks Under Contrasting Climate-Smart Agroforestry Practices in Uganda's Coffee Belt / Multi-Strata Intercropping Doubles the Climate Mitigation Returns of Coffee Farming: Empirical Evidence from Western Uganda	
		Sampo, G.W., Bahame, D and Kalibwani, R	Assessing the use of Napier Grass Extracts for the Bio-Preservation of ensiled tropical grass in Kiruhura district	Dr. Friday Christopher
		Dr. Salaam Mujeeb Dr. Stanley Kangethe, Dr. Jane Nakibuuka & Prof. Suleiman Mbaruka	Prevalence of HIV and Syphilis Co infections among Dementia Patients attending Selected Hospitals in Kampala	

		Evelyn Atukunzire	Risk factors of multi-drug resistant tuberculosis (MDR-TB) among adult patients with pulmonary tuberculosis at Jinja Regional Referral Hospital and Iganga hospital in Busoga region, eastern central Uganda – an unmatched case-control study.	
		John Ssentongo	Community Perspectives, Experiences, and Factors Shaping Perceptions of the Informed Consent Process in Public Health Research in Bushenyi District, Southwestern Uganda	
Plenary 04:00pm – 05:00 pm				
		Dr. Martin Patrick Ongol, Deputy Executive Secretary, UNCST.	Closing remarks on	All
		Dr. Karlmax Rutaro, Managing Director NEMRA and Dr. Martin Patrick Ongol Chairman NEMRA Board of Directors.	Presentation of awards to best presenters and all conference presenters	All
05.00 p.m. - 06.00 p.m. Evening tea and Networking				

Poster Presentations

1.	Edwin Muhumuza	Collateralising Creativity: A Framework for IP-Backed Lending and Financial Inclusion in Uganda's Creative Economy
2.	Pavious Nkumbi, Joseph Lubyayi Bayita, Moses Okol, Julius Mulindwa & Karlmax Rutaro	Urinary Metabolic Biomarkers among Commercial Motorcyclists in Uganda: A Cross-Sectional Study
3.	Santa Obina	Determinants of Sustainable Rural Livelihood Initiatives: An Integrated Framework Connecting Leadership theory and practice
4.	Robert Aonyi	Climate Action, Environmental Sustainability, and Green Technologies: Pathways to Sustainable Development in the Twenty-First Century
5.	Ronald Nkamusiima	Effect of Anthropogenic Activities on the Health of Mayanja Wetland area in Buyala Village-Wakiso District
6.	Richard Asiimwe	Corporate income tax compliance is central to domestic revenue mobilisation in developing
7.	James Asiimwe	An Integrated ERP And Mobile Application Framework for Enhancing Milk Quality Monitoring and Reducing Post Harvest Waste in Uganda's Dairy Industry.
8.	Benjamin Byarugaba	Beyond Income Generation: Why Not Every Money-Making Activity Is an Enterprise? Toward an Enterprise Threshold Perspective
10.	Jovinah Natusiima	Health Workers' Perceptions on Advance Care Planning in Palliative Care at the UPDF Directorate of HIV and AIDS.
11.	Shaban Kyasanku	A Readiness Framework for Artificial Intelligence Adoption and Digital Innovation in Private Chartered Universities in Uganda: Evidence from Muteesa I Royal University
12.	Amina Byobona, Abudulmujeeb Babatunde Aremu, Swaibu Zziwa, Naziru Rashid, Ziadah Nankinga, Sumaya Nakitende, Muhammad Alhassan Usman Tanimu, Agnes Masagwai, Evelyn Atukunzire, Henry Irumba, Zikula Nangobi, Victoria Namutosi, Kharim Mwebaza Muluya	Lifestyle and Quarry Site Determinants of Musculoskeletal Injuries among Formal and Informal Stone Quarry Workers in Busoga Region: A comparative Cross-sectional Study
13.	Fred Kamoga Musisi	Digital Heritage and Youth Creativity in Buganda: Reimagining Indigenous Knowledge Systems for Cultural Innovation and Social Transformation

14.	Walter Komaketch	Community-based tourism for Local Economic Development: a Social Business Model perspective in northern Uganda
16.	Juliana Kayaga Sseremba	Entrepreneurship in Sub-Saharan Africa is Creating the Biggest Employment Vehicle through Private Sector Employment
17.	Isaac Muhoozi	Digital Innovation is Transforming Organizations, Economies, and Societies Worldwide.
18.	Sophie Nalunkuma	Internal Control Effectiveness and Bank Risk Taking of Listed Commercial Banks in Sub Saharan Africa.
19.	Kasibante T. Sewunet , B. Owere, E. Larsson, H. Nambuya, M. Anguparu D., Akongo, F. Westerlund, C.G. Giske, V. Nordberg a Nalunkuma	High prevalence of Intestinal ESBL-Producing Enterobacterales in Neonates at Jinja Referral Hospital, Uganda
20.	Emmanuel Natiko	Assessing the Effect of Anthropogenic Land Use Activities on Water Quality and Macro-Invertebrate Diversity on River Namatala, Mbale District-Uganda
21.	Emmanuel Koboi	Building an Entrepreneurial Mindset among Christian Youth: Evaluating the Impact of Leadership and Innovation Training in the Church of Uganda
22.	Perpetua Kyarisiima	Beyond infrastructure: Organizational Capabilities for Sustainable Electricity Sector Transformation in Africa
23.	Rebecca Komukama	Evaluation of microplastic deposits on leaf surface of common roadside edible plants in Kakiri town council Wakiso district
24.	Christine Nuwahereza	Optimisation of fermented finger Millet Formulation to Improve Iron Bioavailability and Reduce Anaemia among adolescent mothers in Isingiro district, Western Uganda.
25.	Acan Hilda	Determining the most Suitable Agricultural Crop Residues for Biomass Energy Production in Northern Uganda
26.	Sylvia Namu	Determination of Oxalate Ion and Vitamin C Content in Spinach Oleracea at Dife
27.	Acamiz Dominic Savio	Financial Literacy as a Catalyst for Youth Entrepreneurship and Sustainable Economic Development in Uganda
28.	Felix Idraku	Exploring Mobile Learning to Support Non-Formal and Formal Learning in Remote Secondary Schools A case of Buvuma Island.

29.	Josephine Namuli	From Digital Access to Financial Capability: Women's Financial Inclusion in Uganda
30	Joseph Lubyayi Bayita, Pavius Nkumbi, Moses Okol, Julius Mulindwa& Karlmax Rutaro	Urinary Levels of Heavy Metal Pollutants and Oxidative Stress Biomarkers among Commercial Motorcyclists in Uganda.
31	Emmanuel Behangana	Application of Random Forest Model for Milk Quality Classification and Prototype System Development in Ugandan Dairy Processing Plants
32	Preeti Kumari, Sudi Balimuttajjo, Irene Aheisibwe	Science Laboratory operationalisation and student's attitude towards science study in secondary schools of Mbarara city
33	Sylvia Nabasumba	Determinants of small holder farmers to invest and level of investment
34	Teopista Akullo and Florence.M. Murungweni	Analysing Malaria Hot Spots among Flood-Prone Communities in Bugoye Subcounty, Kasese District, Uganda
35	Kisaka Annet Magolo and Waneloba Francis Songoni	Assessing the Effect of Climate Change on Water Resources Management in Uganda: A Policy Analysis of Resilience Strategies in the Face of Environmental Uncertainty
36	Victoria Kiboneka	Smallholder farmers' participation in the genetically modified crops and organic farming debate in uganda

THEME 1:

ARTIFICIAL INTELLIGENCE ICT AND DIGITAL
INNOVATION

Beyond Digital Migration: Factors Influencing the Adoption and Continued Viewership of Digital Terrestrial Television in Uganda Leveraging Artificial Intelligence and Digital Innovation for Business Performance in Uganda's Dairy Value Chain

Asiimwe James

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ABSTRACT

Artificial Intelligence (AI) and digital innovation are increasingly reshaping how enterprises improve decision-making, strengthen efficiency, and respond to market changes. In Uganda's dairy value chain, firms and farmer groups continue to face challenges such as low digital maturity, limited data use, weak process automation, and inadequate technology adoption strategies. This study investigates how AI-enabled ICT solutions can improve business performance, operational efficiency, and customer responsiveness in the dairy sector.

The study adopts a mixed-methods approach, combining a review of current literature with primary data collection from dairy farmers, milk collection center managers, processors, and ICT users in selected dairy enterprises in Mbarara, Kiruhura District, and surrounding dairy-producing districts in western Uganda. The study examines the relationship between AI adoption, digital innovation capabilities, and organizational performance in the dairy value chain. It further explores barriers such as skills gaps, cost constraints, data quality issues, and resistance to change, while identifying opportunities in automated milk tracking, predictive analytics, decision support, and intelligent customer service systems.

Preliminary insights suggest that organizations and producer groups that strategically integrate AI into business processes can improve efficiency, reduce losses, enhance traceability, and support faster data-driven decision-making. The study proposes a practical framework for AI adoption in the dairy value chain, emphasizing leadership commitment, digital skills development, data governance, and phased implementation. The findings are expected to contribute to academic discourse and managerial practice by offering evidence-based guidance on how AI can support digital transformation, competitiveness, and sustainability in Uganda's dairy industry.

Keywords: Artificial Intelligence, ICT, Digital Innovation, Business Performance, Digital Transformation, Dairy Value Chain, Uganda.

Your Word is My Command': Exploring The Use of Language as a Rhetor-Metadiscourse Element in Ai Prompts

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ABSTRACT

The rapid expansion of generative Artificial Intelligence (AI) systems has transformed human-computer interaction by positioning language as both instruction and negotiation. This article explores the role of language as a metadiscourse element in AI prompts, examining how users strategically construct prompts to guide, regulate, persuade, and contextualize AI responses. Drawing on metadiscourse theory, rhetorical studies, and discourse analysis, the study investigates how prompt writers employ linguistic resources such as directives, hedges, engagement markers and boosters to shape AI-generated outputs. Based on qualitative discourse analysis of 75 purposively selected AI prompts from educational, professional and creative contexts, the study demonstrates how metadiscourse features influence clarity, specificity, tone and response quality. The article argues that prompts function not merely as commands but as rhetorical performances that reveal users' communicative intentions and expectations with AI systems. The article contributes to emerging scholarship in AI communication studies by conceptualizing prompts as a rhetorical and linguistic practice rather than a purely technical activity. It further highlights the implications of prompt language for digital literacy, human-AI communication and the evolving relationship between language, agency and technological mediation.

Keywords: Artificial Intelligence, prompts, metadiscourse, discourse analysis, rhetoric, human-AI interaction

Beyond Digital Migration: Factors Influencing The Adoption and Continued Viewership of Digital Terrestrial Television In Uganda

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ABSTRACT

Introduction: The transition from analogue to digital broadcasting promised to revolutionize Uganda's media landscape through superior quality and expanded choices. While technical transition is complete, the structural and financial architecture governing actual audience retention remains unstable. This paper investigates the primary factors shaping initial digital migration and the subsequent socio-economic barriers hindering long-term Digital Terrestrial Television (DTT) viewership.

Methods: The study used a mixed-methods research design to capture both statistical trends and qualitative user experiences. From a target parent population of 383,216 households, a sample size of 384 was selected using Krejcie and Morgan's (1970) determination framework. This approach combined statistical surveys on viewer habits with personal interviews about their lived experiences.

Results:

The transition was slow and involuntary. A significant 40.6% of viewers did not migrate until 2016 a full year after the analogue switch-off and 51.68% migrated only because they had no other choice. Due to severe government delays in procuring Free-to-Air (FTA) decoders, private pay-TV dominated the market, with StarTimes capturing 41.2% and GoTV taking 34.0%. In contrast, only 6.3% of respondents were on state-provided Signet FTA decoders, which faced poor signal quality and limited channels, while 6.9% of the population remains unmigrated. Upfront costs were an immediate obstacle, with 74.54% spending their initial migration money just to buy a decoder. Long-term viewer retention is also fragile: 26.8% of respondents suffer from interrupted service, 69.1% of these disconnected viewers blame an inability to afford ongoing monthly subscription fees. On a technical level, 29% struggled with remote controls, 28% with connecting new TV sets, 22% with mounting antennas, and 21% with decoder-to-TV connections. To resolve these issues, a weak institutional support structure forces 46% of citizens to rely on informal networks of neighbors and family, nearly matching the 47% who use official

distributor channels.

Conclusion: Implementing digital infrastructure does not automatically guarantee digital inclusion. Driven by policy delays and procurement bottlenecks, television in Uganda has devolved from a free public resource into an expensive, private financial burden. To mitigate this financial burden and achieve long-term sustainability, the state must actively intervene through Uganda Communications Commission (UCC) by deploying targeted resources from the Uganda Communications Universal Service and Access Fund (UCUSAF) to cushion decoder acquisition costs for vulnerable households and enforcing strictly unencrypted Free-to-Air (FTA) mandates thereby guaranteeing viewers constitutional right to public information without ongoing monthly costs. Finally, because this study captures the immediate post-switchover environment of 2018, there is an urgent need for a comprehensive follow-up study to evaluate the current state of digital inclusion. This subsequent research must assess how declining pay-TV subscriptions, persistent technical vulnerabilities in public distribution networks, and the mass shift toward smartphone-based internet media consumption have reshaped Uganda's modern media landscape over the longer term.

Keywords: Digital Terrestrial Television (DTT); digital migration policy; audience retention; digital divide; media economics; Uganda.

Governing Inclusive Digital Transformation: A Comparative Policy Review of Disability-Inclusive Digital Accessibility in Ugandan Higher Education

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ABSTRACT

Digital transformation has become a defining feature of higher education, with universities increasingly adopting learning management systems, virtual classrooms, digital libraries, online administrative services, and other technology-enabled platforms. While these innovations can enhance learning, institutional efficiency, and educational inclusion, they may also reinforce existing inequalities if digital accessibility is not embedded in institutional policy and governance. In Uganda, despite commitments to disability inclusion through the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) and national legal and policy frameworks, limited research has examined how disability-inclusive digital accessibility is integrated into higher education governance. This proposed study will address this gap by comparing institutional policies at Makerere University, Kyambogo University, Uganda Christian University, and Muteesa I Royal University. Guided by the concepts of digital accessibility and digital justice, the study will employ a qualitative comparative policy review to analyze disability-inclusion policies, ICT and e-learning policies, strategic plans, student support policies, and related governance documents. The analysis will be informed by the UNCRPD and the Web Content Accessibility Guidelines (WCAG 2.2) and will be undertaken using critical discourse analysis to examine policy commitments, governance arrangements, implementation mechanisms, institutional gaps, and emerging good practices. The study is expected to generate evidence that will inform disability-inclusive digital governance and strengthen institutional policy development for equitable digital transformation in higher education. By contributing Global South perspectives to debates on disability studies, digital justice, and inclusive digital governance, the study aligns with the conference theme by advancing knowledge, research, and innovation for holistic development and by contributing to Sustainable Development Goals 4 (Quality Education), 10 (Reduced Inequalities), and 16 (Peace, Justice and Strong Institutions).

Keywords: Disability-inclusive digital accessibility; Digital transformation; Digital governance; Higher education policy; Digital justice; Uganda

Building Nigeria's First Physician-Validated Medical Ai Benchmark and Guideline-Grounded Language Model: A Step Toward Context-Appropriate Clinical Ai for African Health Systems

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¹DipaHealth

Background: Artificial intelligence is increasingly proposed to support clinical decision-making in health systems facing severe workforce shortages, a reality across much of Africa. Yet almost all medical AI is trained and tested on data from North America and Europe, reflecting foreign disease patterns, drug formularies, and treatment protocols. When applied to Nigerian practice, such systems may overlook endemic diseases such as Lassa fever, recommend medicines absent from the National Essential Medicines List, or ignore the resource constraints that shape everyday care. Before any model can be trusted for African clinical settings, its competence in that context must be measurable, and no validated tool existed to measure it.

Methods: We developed two connected resources. First, NigeriaMedQA, a benchmark of 909 clinical questions across 15 nationally important topics, each grounded in an authoritative Nigerian Federal Ministry of Health or Nigeria Centre for Disease Control guideline and reviewed by licensed physicians, with every flagged item verified against its source before release. Second, DipaMed-1, a language model adapted to Nigerian medicine through continued training on 156 million words of Nigerian biomedical text followed by instruction tuning on question-answer data generated from, and independently verified against, the same national guidelines. Evaluation followed a rigorous protocol in which model selection used a separate validation set and the benchmark was scored only once, preventing contamination.

Results: On the benchmark, DipaMed-1 performed comparably to a strong general model overall while outperforming it on the Nigeria-specific clinical topics for which it was built, including mental health, maternal emergencies, availability of essential medicines, tuberculosis–HIV co-infection, and Lassa fever, with gains of up to eight percentage points. Analysis of remaining errors showed they concentrate in exact-dose recall, a known limitation of language models, which is best addressed at deployment through retrieval from source guidelines rather than through further training.

Conclusion: This work delivers the first open, physician-validated benchmark and the first guideline-grounded language model for Nigerian clinical practice, both publicly available. Beyond the technical result, it establishes a reproducible template for building and honestly evaluating medical AI in under-represented African health systems, contributing practical infrastructure toward safe, locally-appropriate clinical decision support for the continent.

Keywords: Medical artificial intelligence, Nigeria, clinical decision support, health systems, language models, African health research

Exploring Possibilities of Extended Reality Technology Use for Higher Education Access Programmes in Hard-To-Reach Areas in Uganda: A Case of Buvuma Island.

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ABSTRACT

This study investigates the possibilities of using Extended Reality technology to support the delivery of Higher Education Access Programmes in Buvuma Island, one of Uganda's most geographically isolated districts. While XR tools such as Virtual Reality and Augmented Reality are increasingly used in global higher education to support interactive learning and simulation, little is known about their potential in low resource island environments. The study aims to explore how lecturers perceive XR technology, what opportunities XR could offer in enhancing access to higher education, and what challenges may hinder its adoption in Buvuma Island. A qualitative approach will be employed with a case study design to guide the research, using semi-structured interviews, documentary analysis, and focus group discussions. Lecturers, students, and ICT education technologists and administrators will participate in the study, all in a sample of twenty two respondents. All will help to generate contextually grounded insights. The Technology Acceptance Model will support interpretation of lecturer attitudes, particularly in relation to perceived usefulness and ease of use. Data will be analysed thematically. The findings are expected to inform policy decisions, contribute to debates on digital inclusion, and offer practical recommendations for integrating XR into Higher Education Access Programme delivery in Uganda's underserved communities.

Keywords: Technology, Higher Education, lecturer attitudes

Beyond Antimicrobial Resistance: Leveraging Artificial Intelligence, Genomic Surveillance, Precision Diagnostics, and One Health Strategies to Combat Emerging Multidrug-Resistant Pathogens in Africa

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ABSTRACT

Background: Antimicrobial resistance (AMR) has become one of Africa's most consequential yet least visible public health emergencies, with the WHO African Region carrying a disproportionate share of global mortality attributable to drug-resistant bacterial infections. Conventional culture-based, manually reported surveillance is structurally too slow to track the emergence and cross-border spread of multidrug resistant (MDR) Gram-negative pathogens, including carbapenem-resistant Enterobacteriaceae, methicillin-resistant *Staphylococcus aureus*, and MDR *Acinetobacter baumannii* that now dominate hospital-acquired and neonatal sepsis across the continent.

Methods: This paper undertook a structured narrative synthesis of current, verifiable peer-reviewed and institutional literature published between 2020 and 2026, drawn from PubMed-indexed journals, WHO GLASS reports, and Africa Centres for Disease Control and Prevention (Africa CDC) policy documents. Evidence was organised across four converging solution domains, artificial intelligence (AI), genomic pathogen surveillance, precision diagnostics, and One Health governance and integrated through a Nigerian case illustration of neonatal sepsis pathogens and carbapenem-resistant

Enterobacteriaceae, to construct a containment framework timed to the African Union's forthcoming AMR Framework 2.0 (2026-2030).

Results: The synthesis found that AI-enhanced biosurveillance and whole-genomesequencing- based resistance prediction can compress detection-to-action timelines from weeks to minutes, yet Africa remains structurally under-represented in global pathogen genomic databases and in a sustained public-health bioinformatics workforce. As of the most recent assessments, only about a third of African countries were submitting AMR data to WHO GLASS, and most national reference laboratories routinely tested for just five of fifteen priority pathogens. Diagnostic access lagged similarly: only 58% of people with tuberculosis received a WHO-recommended rapid diagnostic test in 2023, with just seven of twenty-four analysed countries on track to meet the 2027 universal-access target. A whole-genome-sequencing study of Group B Streptococcus in Port Harcourt, Nigeria demonstrated that genomic characterisation of neonatal sepsis pathogens is technically achievable within a West African clinical population, even though such capability remains confined to isolated research efforts rather than routine national surveillance. Continental governance is converging around these gaps: Africa CDC and African Union partners concluded in late 2025 that a strengthened, cross-sectoral AMR Framework 2.0 must translate One Health coordination into financed, country-level action.

Conclusion: No single technology will resolve Africa's AMR crisis in isolation. Durable containment demands the deliberate integration of AI-assisted surveillance, decentralised genomic sequencing, equitable precision diagnostics, and binding One Health governance into one interlocking system anchored in the African Union AMR Framework 2.0 and sustained by a trained continental workforce rather than project length donor cycles.

Keywords: Antimicrobial resistance; artificial intelligence; genomic surveillance

THEME 2:

AGRICULTURE FOOD SECURITY AND THE
BIOECONOMY

Economic Viability and Stability of Investing in Farmer-Based Seed Potato Production in South Western Uganda

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ABSTRACT

In potato growing, farmer-based seed potato production system plays a significant role in producing and supplying good quality seed potato to smallholder farmers unserved by the formal seed system. However, limited evidence exists on whether farmer-based seed potato production systems are economically viable and stable enterprises. This study examined the viability and stability of investing in farmer-based seed potato production in South-Western Uganda. Data on costs, production output, revenues, and selling price were collected from seed potato producers in Kabale and Kanungu districts using a survey questionnaire. Net present value, Returns on investment, Breakeven and Simulation analysis were used to analyse the data. The results show that, investing in farmer-based seed potato production is viable and stable even with market uncertainties of price reductions and increasing variable costs since Net present value and Return on investment values are positive. However, the viability and stability of investments significantly differs across the districts, seasons and typologies. The variation in returns depended on production level, selling price, seed type produced and adoption of seed production innovations. Further, the results revealed that changes in market uncertainties of increasing costs and reducing prices beyond 15% would reduce farmers' profitability in typologies 1 and 3 hence, likely to demotivate them to invest in the future. The finding presupposes that, the use of basic seed potato, adoption of seed potato production innovations, regulation of selling price and use of cost reduction technologies is likely to increase farmer profitability and stability. Overall, the most viable and stable typologies were typologies 4 and 2 which lead to the conclusion that farmer-led seed potato production can be profitable to farmers working under semi-formal and informal arrangements. Thus, it would be beneficial to improve the access of typology 2 farmers to basic seed, in order to harness their contribution to quality seed production. Support for typology 4 farmers is a long-term solution to the problem of limited production of quality seed potato. Therefore, the study indicates that, investing in farmer-led seed production can serve as a valuable option for producing low-cost good-quality seed potato that will ultimately contribute to smallholder farmers' income and seed security in Uganda.

Keywords: Economic viability, farmer seed potato production, farm typology, market uncertainties, Net present value

A Comparative Assessment of Soil Organic Carbon Stocks Under Contrasting Climate-Smart Agroforestry Practices in Uganda's Coffee Belt /Multi-Strata Intercropping Doubles the Climate Mitigation Returns of Coffee Farming: Empirical Evidence from Western Uganda

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ABSTRACT

Climate-smart agroforestry (CSAF) is widely promoted as a nature-based strategy for restoring soil organic carbon (SOC) and mitigating climate change, yet localized evidence for coffee-based systems in Western Uganda remains limited. This study assessed SOC stocks under three practices used by smallholder coffee farmers in Kigarama Sub-County, Sheema District: multi-strata intercropping (CSAF1), boundary planting with scattered trees (CSAF2), and a monocrop control. A cross-sectional survey collected soil samples from 138 farms stratified equally (46 each) across the three practices. Composite samples (0-30 cm) were analyzed for SOC concentration via near-infrared spectroscopy, and SOC stocks were computed from concentration, bulk density, and depth; data were analyzed using descriptive statistics, one-way ANOVA, Tukey HSD, and linear regression, with SOC stocks converted to carbon dioxide equivalents using the IPCC factor of 3.67. SOC stocks differed significantly across practices ($F(2,135) = 11.78, p < 0.001, \eta^2 = 0.149$). Multi-strata intercropping recorded the highest mean SOC stock ($7.18 \pm 2.39 \text{ t C ha}^{-1}$), 46.2% higher than the control ($4.91 \pm 2.10 \text{ t C ha}^{-1}$), while boundary planting was intermediate ($5.96 \pm 2.26 \text{ t C ha}^{-1}$), 21.4% higher than the control. Regression confirmed both effects (CSAF1: $+2.28 \text{ t C ha}^{-1}, p < 0.001$; CSAF2: $+1.05 \text{ t C ha}^{-1}, p = 0.027$); in CO_2 equivalents, multi-strata intercropping sequestered $26.35 \text{ t CO}_2 \text{ ha}^{-1}$ against $21.87 \text{ t CO}_2 \text{ ha}^{-1}$ for boundary planting and $18.01 \text{ t CO}_2 \text{ ha}^{-1}$ for monocrop. These findings show that structurally diverse, multi-strata agroforestry delivers substantially greater soil carbon benefits than boundary planting or monoculture. The study recommends that policymakers designate multi-strata intercropping as the standard extension model for Uganda's coffee belt, supported by carbon finance mechanisms, while future research should track SOC dynamics longitudinally and sample below 30 cm to capture deep-soil carbon from tree roots.

Keywords: Soil organic carbon, climate-smart agroforestry, carbon sequestration, coffee smallholders, Western Uganda

Assessment of the Effects of Selected Agrochemicals on Soil Macro-Invertebrates in Sugar Cane (*Saccharum Officinarum* L.) Plantations in Masindi District, Uganda

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ABSTRACT

The rise in sugar demand has led to increased sugarcane cultivation, driving extensive use of agrochemicals like herbicides, and fertilizers. The aim of the study was to assess the effect of 2,4-D and NPK fertilizer on soil macro-invertebrates in sugar cane plantations. A completely randomized block design was conducted in Masindi district Bulima town council for 8 weeks where sugar cane was planted in 4 plots per block having 4 treatments with 3 repetitions (1 dose 3 replications) giving a total of 12 experimental units (EU). Plots were subjected to different treatments, one plot in each block was left untreated to serve as control. Soil samples were collected from the plots by a core sampler method to analyse soil properties and evaluate presence of soil dwelling macro invertebrates. Data analysis was done using IBM SPSS version 26. One – way ANOVA was done to test the variation in the soil health parameters of invertebrate size, number, abundance, and macro invertebrate morphological features at significance $P < 0.05$. The results show that the application of 2,4-D herbicide, NPK fertilizer, and their combination had a significant effect on soil pH and texture. Specifically, 2,4-D increased soil alkalinity, while NPK—particularly nitrogen-rich formulations—lowered pH due to nitrification processes. Chemical treatments had an effect on the sand content and an increase in silt, with clay levels rising most notably under NPK application. In terms of biological impact, the short-term application of these agrochemicals did not significantly affect the abundance of soil macro-fauna such as earthworms, millipedes, and centipedes. However, macro invertebrate diversity and stability were highest in the untreated control plots. Notably, while the combination of NPK and 2,4-D appeared to buffer the negative effects of herbicide application, 2,4-D alone consistently suppressed macro invertebrate diversity. Additionally, no significant morphological changes such as variations in body length, segment number, or coloration were observed in the macro invertebrates across all treatment groups over the 8-week period. In conclusion short-term 2,4-D and NPK use alters soil properties without affecting macro invertebrate morphology but reduces biodiversity; control plots showed highest ecological stability. The study recommends that farmers limit herbicide use and adopt agro-ecological practices, while relevant authorities take the lead in conducting long-term monitoring of agrochemical effects. Extension services should also educate farmers on the environmental and health impacts of agrochemicals to support soil health and biodiversity.

Keywords: Agrochemicals; 2,4-D herbicide; NPK fertilizer; Soil macro-invertebrates; Soil biodiversity; Soil properties; Sugarcane

University Incubation and Agribusiness Sustainability: The Mediating Role of Agribusiness Innovation in Uganda

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ABSTRACT:

This study examined the effect of university incubation on agribusiness sustainability through agribusiness innovation in Uganda. The study was motivated by persistent challenges facing agribusiness sustainability, including low returns on investment, constrained sales revenue growth, declining soil fertility, inadequate value addition, limited employment opportunities, and weak commercialization despite the sector's significant contribution to Uganda's economy. The study was anchored on the Triple Helix Theory and the Resource-Based View Theory, which explain how university-industry-government collaboration and strategic resource capabilities promote innovation and sustainable enterprise development. A cross-sectional quantitative research design was adopted using a sample of **311 respondents** drawn from agribusiness enterprises, university incubation initiatives, and agribusiness support networks in Uganda. Data were collected using structured questionnaires and analyzed using descriptive statistics, Pearson correlation analysis, Confirmatory Factor Analysis (CFA), Structural Equation Modelling (SEM), and bootstrapping mediation analysis. The SEM results revealed that university incubation significantly and positively influenced agribusiness sustainability ($\beta = 0.641$, $p < 0.001$) and agribusiness innovation ($\beta = 0.486$, $p < 0.001$), while agribusiness innovation significantly influenced agribusiness sustainability ($\beta = 0.417$, $p < 0.001$). The mediation analysis further established that agribusiness innovation partially mediated the relationship between university incubation and agribusiness sustainability through a significant indirect effect ($\beta = 0.267$, 95% CI = 0.174–0.382, $p < 0.001$), alongside a significant direct effect ($\beta = 0.486$, 95% CI = 0.372–0.601, $p < 0.001$) and total effect ($\beta = 0.753$, 95% CI = 0.641–0.841, $p < 0.001$). The study concludes that university incubation is a critical driver of agribusiness sustainability both directly and indirectly through strengthening agribusiness innovation. The findings imply that investments in mentorship, entrepreneurial training, networking support, research commercialization, and access to finance can significantly enhance sustainable agribusiness development. The study recommends strengthening university-industry partnerships, expanding incubation financing, promoting agribusiness innovation ecosystems, and supporting university incubation hubs to accelerate agribusiness sustainability in Uganda.

Keywords: University Incubation, Agribusiness Innovation, Agribusiness Sustainability, Structural Equation Modelling, Triple Helix Theory, Resource-Based View Theory.

Enhancing Sustainable Coffee Farming In Uganda: Adoption and Adoption Intensity of Organic Farming Practices among Smallholder Robusta Coffee Farmers in Kagongo Division

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ABSTRACT

Smallholder Robusta coffee farmers in Uganda face increasing climate-related production risks, yet the uptake of organic farming practices that can support soil health and climate resilience remains uneven. This study identified the organic farming practices adopted by coffee farmers in Kagongo Division and examined the determinants of adoption and adoption intensity. A cross-sectional survey design was used. Multistage sampling selected 226 respondents, and primary data were collected through semi-structured questionnaires and key informant interviews in Kashangura, Kyeikucu and Kagongo wards. Descriptive statistics summarized adoption of six practices: mulching, agroforestry, intercropping, cover cropping, manure application and integrated pest management. A multivariate probit model was used to analyze factors associated with adoption of individual practices, while a Poisson regression model estimated determinants of adoption intensity. Results showed that manure application was the most widely adopted practice (64.36%), although its adoption rate did not differ significantly ($P > 0.05$) from those of intercropping (60.40%) and agroforestry (59.41%) but differed significantly from that of mulching (57.92%). Most farmers (55.94%) adopted two or three practices, indicating partial rather than full integration of organic coffee-farming packages. Access to credit and farm income were positively and statistically associated with both adoption and adoption intensity, while access to extension services was negatively associated with both outcomes. These findings suggest that maximizing farm income, improving credit access and expanding targeted extension services could increase the uptake of complementary organic practices. Extension interventions should therefore move beyond stand-alone practice promotion and support locally appropriate combinations of organic practices with potential to improve coffee production, household incomes and climate resilience.

Keywords: Organic coffee farming; Robusta coffee; Smallholder farmers; Adoption intensity

Antibiotic Residues and Associated Farm-Level Factors in Eggs from Commercial Layer Chicken Farms in Wakiso District, Central Uganda

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ABSTRACT

Background: Antibiotic residues in eggs are an important food safety and One Health concern, particularly in poultry production systems where antibiotics are frequently used without adequate professional guidance or where withdrawal periods are not consistently observed. Wakiso District is a major poultry-producing area in Central Uganda, but district-specific evidence on antibiotic residues in commercial layer eggs remains limited.

Objective: To determine the prevalence of detectable antibiotic residues in eggs from commercial layer chicken farms in Wakiso District and identify farm-level factors associated with their occurrence.

Methods: An analytical cross-sectional study was conducted among 96 commercial layer chicken farms. Farms were selected using stratified sampling by farm size, with probability proportional to size. Five eggs were collected from each farm and analysed for tetracycline, macrolide and sulfonamide residues using High-Performance Liquid Chromatography with ultraviolet detection. A farm was classified as residue-positive if at least one tested residue class was detected. Data were analysed in Stata version 15 using descriptive statistics, chi-square or Fisher's exact tests, and age- and sex-adjusted modified Poisson regression with robust standard errors.

Results: Of the 96 farms, 52 were positive for detectable antibiotic residues, giving a farm-level prevalence of 54.2% (95% CI: 43.7-64.4). Tetracyclines were the most frequently detected residue class, occurring in 43 farms (44.8%), followed by macrolides in 27 farms (28.1%) and sulfonamides in 23 farms (24.0%). Multiple residue classes were detected in 33 farms (34.4%). In the adjusted model, residue positivity was associated with frequent antibiotic use (aPR=1.82; 95% CI: 1.10-3.02; p=0.019), non-observance of withdrawal periods (aPR=1.67; 95% CI: 1.17-2.40; p=0.005), inconsistent or no prescription use (aPR=1.47; 95% CI: 1.05-2.06; p=0.026), and low farmer knowledge (aPR=1.96; 95% CI: 1.27-3.02; p=0.002). The commonly used antibiotics were tetracycline, amoxicillin, oxytetracycline, doxycycline, enrofloxacin, sulfonamides and tylosin.

Conclusion: Detectable antibiotic residues were present in more than half of the commercial layer farms studied. Strengthening farmer education, veterinary-guided prescription practices, withdrawal-period compliance and routine residue monitoring may improve egg safety and support antimicrobial stewardship in poultry production.

Keywords: Antibiotic residues; eggs; commercial layer farms; withdrawal period; antimicrobial stewardship; Wakiso District; Uganda.

Application of Random Forest Model for Milk Quality Classification and Prototype System Development in Ugandan Dairy Processing Plants

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ABSTRACT

Milk quality remains a major concern in Ugandan dairy processing plants due to post-harvest losses, inconsistent handling practices, and the continued reliance on manual quality assessment methods that are often slow, subjective, and insufficient for timely decision-making. These challenges are particularly significant in key dairy-producing districts such as Mbarara and Kiruhura, where maintaining milk quality is essential for food safety, market competitiveness, and public health. This study was undertaken to develop and evaluate a Random Forest model for milk quality classification and to integrate the model into a prototype system to support decision-making in Ugandan dairy processing plants.

A standards-bounded synthesized dataset comprising 1,500 samples was constructed using East African raw milk quality standards EAS 67:2023 after access to operational plant data proved restricted. The dataset included 11 physicochemical, microbiological, and sensory attributes, namely pH, temperature, taste, odor, fat content, titratable acidity, protein content, lactose content, Total plate count, somatic cell count, and color.

Data preprocessing was undertaken to prepare the dataset for machine learning classification. Several classification models were evaluated during experimentation, including Support Vector Machine, Artificial Neural Network, XGBoost, and Random Forest. Among the evaluated models, Random Forest achieved the best overall classification performance and was therefore selected as the principal model for the study. The selected model was then integrated into a web-based prototype interface developed to classify milk quality into low, medium, and high categories.

The findings showed that the Random Forest model provides a practical approach for supporting milk quality classification in dairy processing environments where rapid and consistent interpretation of quality indicators is required. The selected model was subsequently integrated into a prototype web-based system named DairyIQ which offers an interactive interface through which plant operators can enter quality-related parameters and obtain classification outputs that may support routine quality assessment.

The study demonstrates that machine learning can provide a practical foundation for digital milk quality screening and decision support in Ugandan dairy processing contexts. However, because the model was validated using a synthesized standards-aligned dataset rather than real-time operational records, the findings should be interpreted as a proof of concept. Future work should therefore focus on validating the model using field data from dairy processing plants and refining the prototype for operational deployment.

Assessment of Phytoremediation Mechanisms of Selected Plant Species in the Removal of Lead, Cadmium, Copper And Arsenic from Contaminated Soil and Wastewater Sediments in Nakivubo Wetland, Uganda

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ABSTRACT

Heavy metal contamination of soils and wastewater sediments remains a major environmental challenge in rapidly urbanizing and industrializing regions. Phytoremediation has emerged as a sustainable and cost-effective approach for mitigating heavy metal pollution through the use of plants capable of accumulating, stabilizing, and translocating contaminants. This study examined the phytoremediation mechanisms employed by *Commelina benghalensis*, *Pennisetum purpureum*, *Sida acuta*, and *Cynodon dactylon* in the remediation of Lead (Pb), Cadmium (Cd), Copper (Cu), and Arsenic (As) from contaminated soils and wastewater sediments in Nakivubo Wetland, Uganda. The study utilized Bio-concentration Factor (BCF), Biological Absorption Coefficient (BAC), and Translocation Factor (TF) to determine whether the dominant mechanism was phytoextraction or phytostabilization. Results showed that all four species accumulated significant amounts of heavy metals in their tissues, although the concentrations varied with plant species, metal type, and sampling site. *Commelina benghalensis* recorded the highest Bio-concentration Factor values for cadmium in shoots (values > 10), while *Cynodon dactylon* showed the highest uptake of copper. *Pennisetum purpureum* and *Sida acuta* demonstrated the strongest Translocation Factor patterns, particularly for lead and copper (TF > 1), confirming their potential for phytoextraction. Conversely, *Cynodon dactylon* exhibited TF values below one across most metals, indicating phytostabilization behaviour. Bioaccumulation and translocation differed significantly ($p < 0.05$) among species, sites, and metals. These findings indicate that the studied plant species can serve both as phytoextractors and phytostabilizers, depending on the metal of concern, supporting their use in phytoremediation strategies for heavy-metal-contaminated wetlands in Uganda and similar tropical ecosystems.

Keywords: Phytoremediation, Heavy metals, Nakivubo Wetland

Evaluation of Lemon Juice Egg Shell Urine Based Bio Fertiliser on Growth Parameters of Tomato (*Solanum Lycopersicum*) Seedlings in Wakiso District, Uganda

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ABSTRACT

Tomato (*Solanum lycopersicum*) production depends greatly on adequate soil nutrients, yet many farmers face challenges associated with the high cost and environmental impacts of synthetic fertilizers. Organic household wastes such as human urine, eggshells, and lemon juice contain valuable plant nutrients but are rarely utilized as agricultural inputs. This study investigated the effects of Lemon Juice–Eggshell–Urine (LJEU) biofertilizer on tomato seedling growth and selected soil properties. An experimental design was conducted in Kira Municipality, Uganda, where tomato seedlings were treated with LJEU biofertilizer, inorganic fertilizer (NPK), and distilled water as a control. Growth parameters including plant height, stem girth, and leaf number were monitored for four weeks, while soil pH, nitrogen, and calcium levels were assessed before and after treatment. Data were analyzed using descriptive statistics and one-way ANOVA. Results showed that LJEU biofertilizer significantly improved tomato seedling growth compared to the control. Plant height increased from 8.1 cm to 16.2 cm, stem girth reached 4.9 mm, and leaf number increased to an average of 14 leaves. Soil fertility also improved, with pH increasing from 5.8 to 6.4, nitrogen content from 0.11% to 0.24%, and calcium levels from 320 mg/kg to 520 mg/kg. Growth performance under LJEU treatment was comparable to that obtained with inorganic fertilizer. The study concludes that LJEU biofertilizer is an effective, low-cost, and environmentally sustainable fertilizer that enhances tomato seedling growth and improves soil nutrient status. Its use can promote recycling of household waste materials while providing an affordable alternative to synthetic fertilizers for smallholder farmers.

Keywords: Biofertilizer, Tomato, Organic waste recycling, Seedling growth, Sustainable agriculture, Human urine, Eggshell

Evaluation of Oxalate Ion and Vitamin C Content in *Spinacia Oleracea* at Different Developmental Stages

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ABSTRACT

Spinach (*Spinacia oleracea*) is a widely consumed leafy vegetable known for its high nutritional value, particularly its vitamin C content. However, it also contains oxalate ions, which can reduce mineral absorption and may contribute to kidney stone formation in susceptible individuals. Although spinach is harvested and consumed at different stages of growth, limited information exists on how its nutritional and anti-nutritional components change during development. This study evaluated the concentrations of oxalate ions and vitamin C in spinach at two developmental stages (2 weeks and 4 weeks) to determine the most suitable stage for healthy consumption. Fresh spinach samples were collected from the Kyambogo University West End Biology Garden and analyzed in the university laboratory. Oxalate ion concentration was determined using potassium permanganate redox titration, while vitamin C content was determined using the DCPIP titration method. Five replicate analyses were performed for each growth stage, and the data were analyzed using descriptive statistics and Welch's t-test at a 95% confidence level. The results showed a significant increase in oxalate ion concentration from 0.7363 ± 0.0033 g/L in 2-week-old spinach to 1.3273 ± 0.0067 g/L in 4-week-old spinach ($p < 0.05$). In contrast, vitamin C concentration decreased significantly from 0.66 ± 0.07 g/L to 0.30 ± 0.03 g/L ($p < 0.05$) over the same period. These findings indicate that younger spinach contains higher vitamin C and lower oxalate levels than mature spinach, making it the more nutritious and healthier option for consumption. The study concludes that harvesting spinach at an earlier growth stage can maximize nutritional benefits while minimizing the potential health risks associated with high oxalate intake. Further research should investigate the environmental and genetic factors that influence these changes during spinach development.

Keywords: Spinach; Oxalate content; Ascorbic acid; Plant growth stages

Assessing the Use of Napier Grass Extracts for the Bio-Preservation of Ensiled Tropical Grass in Kiruhura District

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ABSTRACT

This study assessed the effectiveness of Napier grass (*Pennisetum purpureum*) fermented juice lactic acid bacteria (FJLB) extracts as a natural bio-preservative for improving the fermentation quality, nutritional composition, and aerobic stability of ensiled tropical grasses in Kiruhura District, Uganda. Ensiling is a widely adopted forage preservation method in tropical livestock systems; however, high ambient temperatures, microbial instability, nutrient losses, and rapid spoilage upon exposure to air limit silage quality among smallholder dairy farmers. Conventional additives such as molasses are costly and do not consistently guarantee optimal preservation. This study therefore evaluated the potential of locally prepared FJLB extracts as an affordable alternative additive.

An experimental research design was employed with three treatments: (1) control (water only), (2) molasses additive, and (3) FJLB extract derived from fresh Napier grass. Fresh forage was chopped and ensiled under anaerobic conditions in airtight plastic bags. Samples were collected at 2, 7, 14, and 45 days of fermentation. Parameters analyzed included pH, lactic acid bacterial counts, dry matter (DM), crude protein (CP), neutral detergent fibre (NDF), ash, calcium (Ca), phosphorus (P), fat content, and gross energy (GE). Data were analyzed using descriptive statistics and one-way ANOVA to determine significant differences among treatments.

Results indicated that FJLB-treated silage achieved faster pH reduction and maintained more stable acidic conditions compared to molasses and control treatments. The extract improved crude protein retention and maintained favorable dry matter content. Aerobic stability was enhanced in FJLB-treated silage, demonstrating greater resistance to spoilage after air exposure. In contrast, water-treated silage exhibited higher pH values and greater microbial instability, indicating poor fermentation performance. Although molasses reduced certain spoilage microorganisms, it did not consistently outperform FJLB in overall fermentation quality and nutrient preservation.

The study concludes that Napier grass FJLB extract is an effective, low-cost, and locally available bio-preservative capable of enhancing silage quality and stability. Adoption of this technology can improve feed security, livestock productivity, and income resilience among smallholder dairy Farmers in Kiruhura District.

THEME 3:

TOURISM, CULTURE AND THE CREATIVE ECONOMY

Evaluating the Operational Performance of Community-Based Tourism Enterprises and their Contribution to Community Conservation Outcomes Around Bwindi Impenetrable National Park

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ABSTRACT

Although Community Based Tourism Enterprises (CBTEs) significantly support conservation and sustainable livelihoods around Bwindi Impenetrable National Park, over 30 years they have undergone major changes in management, population, market demand and tourist numbers, whose effect on the performance of CBTEs remains unevaluated. There is a danger of over-reliance of communities on CBTEs, which creates a syndrome of complacency in communities to only look at biodiversity as their only source of livelihood, hindering their innovation in terms of income generation. This may lead to communities relying on the park resource as the only source of innovation for income or survival, putting a threat to the intended conservation outcomes. This study evaluated the performance of CBTEs operating within the four sectors of Bwindi Impenetrable National Park (BINP), Buhoma, Ruhija, Rushaga, and Nkuringo, to determine the extent to which they have lived up to their mandate of supporting livelihoods and enhancing conservation outcomes. Data were collected through questionnaire surveys with CBTE registered members, CBTE employees, Managers; in-depth interviews with UWA officials, Ministry of Tourism officials, local government officials, as well as NGO representatives and Focus Group Discussions (FGDs) with CBTE participants ranging from 6 to 12 participants. Community-Based Tourism Enterprises (CBTEs) around BINP exemplify a sustainable development model that integrates livelihood improvement, social cohesion, and conservation promotion. The findings show a significant relationship between CBTE performance and conservation outcomes like providing socio-economic and environmental benefits, which strengthen local support for conservation, supporting the community's drive to protect natural resources. To enhance their impact, strategic interventions are needed to increase the number of community-owned accommodation-based enterprises, capacity building to improve service quality, strengthening collaborations between CBTEs, tour operators and NGOs for value chain connections to increase tourist flow, leveraging digital marketing to increase visibility of CBTEs for better outcomes.

Community-Based Tourism for Local Economic Development: A Social Business Model Perspective in Northern Uganda

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ABSTRACT

The study explored Community-based tourism as a means for achieving Local economic development using a Social Business Model perspective in Northern Uganda. The quest for Community-based tourism arose because, the traditional tourism development approach, which was grounded on the top-down development mechanism paid limited attention encouraging active Community participation. Furthermore, it was characterised by inadequate community control and power in decision-making, Management, planning, monitoring, and sharing of the benefits accruing from tourism activities at the destination. As a result, Community-based tourism was sought as an alternative because it was capable of acting as an anchor for Community participation which is believed to be the foundation of Local economic development. This study contends that community-based tourism could promote Local economic development when is well managed. Conceptually, it was guided by Community-based tourism, Local economic development, and Social Business Model, and underpinned by the Ladder of citizen participation, Community driven development and paradox theories

THEME 4:
MINERALS. ENERGY AND NATURAL RESOURCE
DEVELOPMENT

Efficient Energy Usage Typologies: Adoption and Determinants of Energy-Saving Appliances among Ugandan Households

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ABSTRACT

This study investigates household adoption of energy-efficient technologies in Uganda using nationally representative data from the Uganda National Household Survey 2020/21. We develop an integrated econometric framework that combines Latent Class Analysis (LCA), Multinomial Logit (MNL) models, and Logistic and Poisson regressions to capture adoption heterogeneity, identify structural determinants, and differentiate between adoption incidence and intensity. LCA probabilistically classifies households into four adoption typologies: nonadopters, lighting-only adopters, heating-only adopters, and broad adopters. MNL models quantify the demographic, geographic, and infrastructural factors that shape class membership, whereas logistic and Poisson specifications reveal who adopts at least one technology and how deeply it extends across multiple domains. The results showed that over 90% of the households remained non-adopters, with efficient lighting as the primary entry point, minimal cooking, and virtually no heating. Adoption is consistently constrained by electricity access, affordability, and household asset levels, whereas urban residences, education, and younger household heads significantly increase the likelihood of adoption. By integrating latent adoption typologies with incidence–intensity modeling using nationally representative household data, this study advances beyond conventional binary adoption analyses and provides robust, policy-relevant evidence on the structural constraints shaping Uganda’s household energy transition.

Keywords: Electricity access, Energy-efficient technologies, Latent class analysis, Multinomial logit model, Adoption intensity, Adoption incidence, Energy transition

THEME 5:
FINANCIAL LITERACY, INCLUSION AND SUSTAINABLE
FINANCIAL MANAGEMENT

From Stage to Enterprise: Theatre Schools as Incubators for Creative Businesses in Ghana

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ABSTRACT

The creative economy Has emerged as an important driver of innovation, employment and cultural production. Yet it appears theatre arts graduates often leave school without the entrepreneurial capabilities and institutional support needed to translate creative talent into sustainable business ventures. This study examines the Department of Theatre Arts in the School of Creative Arts in the University of Education, Winneba as a case study of how Ghanaian theatre schools can function as incubators for creative enterprises within the Cultural Policy of Ghana (2026). The study is anchored in a composite theoretical framework Arts Entrepreneurship Education, the Entrepreneurial University Ecosystem and the Capability Approach. It analyses how entrepreneurial competencies can be developed, how institutional logics shape arts education and how theatre schools can expand students' real opportunities for venture creation. A qualitative case study design was adopted. Data were gathered through semi-structured interviews with 25 participants comprising of faculty members (n=10), theatre arts graduates (n=10) and industry players and policymakers (n=5) alongside document analysis of curricula, strategic plans and relevant policy texts. The data were analysed thematically. The findings show that current theatre curricula include minimal entrepreneurship education and that graduates face barriers such as skill gaps, limited market access and resource constraints. However, the school possesses valuable assets such as performance facilities, industry networks and cultural expertise. These could be leveraged through dedicated incubation initiatives. The study proposes a theatre-school-based incubation framework that integrates embedded entrepreneurship training, industry mentorship and seed funding pathways. Repositioning theatre schools in this way could strengthen graduate employability stimulate creative business formation and enhance the social, cultural and economic value of theatre education in Ghana.

Keywords: Theatre Education, Creative industries, Arts Entrepreneurship, Business Incubation, Ghana, Cultural Economy, Cultural Policy of Ghana

Financial Literacy and Financial Inclusion among Rural Households in Uganda: The Mediating Role of Financial Self-Efficacy

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ABSTRACT

Financial inclusion remains a critical pathway for promoting inclusive economic development, poverty reduction, and household financial resilience, particularly in rural and underserved communities. Despite various policy interventions aimed at expanding access to formal financial services in Uganda, households in the Rwenzori Sub-Region continue to experience limited participation in formal financial systems. This study examined the relationship between financial literacy and financial inclusion among households in the Rwenzori Sub-Region, with specific focus on the mediating role of financial self-efficacy. The study was guided by the Financial Literacy Theory of Financial Inclusion and Social Cognitive Theory. A pragmatist research paradigm and explanatory sequential mixed-methods design were adopted, integrating quantitative and qualitative approaches. The quantitative phase involved a cross-sectional survey of 399 household heads selected from Kasese, Bundibugyo, and Ntoroko districts using stratified and simple random sampling techniques. Qualitative data were collected through semi-structured interviews with 12 key informants, including district administrative officers, sub-county chiefs, and parish chiefs. Quantitative data were analysed using descriptive statistics, Pearson correlation, regression analysis, and bootstrapped mediation analysis, while qualitative data were analysed thematically.

The findings established that financial literacy significantly predicted financial inclusion among households in the Rwenzori Sub-Region ($\beta = 0.583, p < 0.001$), indicating that households with higher financial knowledge, skills, attitudes, and behaviours were more likely to access, use, and benefit from formal financial services. Financial literacy also had a significant positive effect on financial self-efficacy ($\beta = 0.548, p < 0.001$), while financial self-efficacy significantly influenced financial inclusion ($\beta = 0.462, p < 0.001$). The mediation analysis revealed a significant indirect effect of financial literacy on financial inclusion through financial self-efficacy (Indirect effect = 0.253, 95% CI [0.181, 0.332]), confirming that financial self-efficacy partially mediates this relationship. The direct effect of financial literacy on financial inclusion remained significant after introducing the mediator ($\beta = 0.330, p < 0.001$), demonstrating partial rather than full mediation. Qualitative findings reinforced these results by showing that households' financial confidence was context-specific; while many respondents demonstrated confidence in managing everyday household

finances, their confidence declined when interacting with formal financial institutions due to fear, limited understanding of financial procedures, and restricted decision-making power, particularly among women.

The study concludes that financial literacy alone is insufficient to achieve meaningful financial inclusion; rather, its effectiveness depends partly on households' confidence and perceived ability to apply financial knowledge in real financial contexts. The study recommends that financial inclusion policies and programmes integrate financial education with interventions that strengthen financial self-efficacy, practical decision-making skills, and household financial empowerment. The study contributes to financial inclusion scholarship by providing empirical evidence on the psychological mechanism through which financial literacy translates into financial inclusion within a rural developing-country context.

Keywords: Financial literacy; Financial self-efficacy; Financial inclusion; Rural households; Rwenzori Sub-Region; Uganda.

Indigenous Knowledge-Based Entrepreneurship and Business Resilience Post-Covid19 in Africa

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ABSTRACT

Businesses that combine innovation and tradition can promote inclusion, long-term resilience, and economic recovery, establishing indigenous knowledge systems as crucial to sustainable development in post-pandemic Africa. In the wake of COVID-19, this study examines the dynamic relationship between business resilience and indigenous knowledge-based entrepreneurship, concentrating on the experiences of micro, small, and medium-sized firm (MSME) owners in Mbarara, Uganda. To give a thorough analysis, the study uses a cross-sectional research design using mixed methods, combining qualitative and quantitative techniques. A sample of 260 small business owners provided the data, which shed light on the resilience strategies used by Indigenous business owners to deal with post-pandemic difficulties.

To assess linkages and identify important drivers of resilience among Indigenous knowledge-based firms, the study used descriptive analysis in conjunction with Pearson correlation, linear regression, and ANOVA testing using SPSS 17.0. Results show that by encouraging adaptive innovation, community resilience, and sustainable growth, Indigenous knowledge systems play a major role in post-pandemic recovery. These elements enable companies to create frameworks that reduce future risks and maintain flexibility during difficult times.

This paper recommends that African governments and policymakers are to create frameworks that acknowledge and promote indigenous knowledge systems as being essential to economic resilience. Such policies can serve larger objectives for equitable and sustainable economic development by fostering the expansion of robust, culturally-rooted companies by integrating traditional practices into official economic frameworks. In a changing global economy, acknowledging and encouraging local entrepreneurship can be extremely important for bolstering Africa's economic stability and environmental sustainability.

Keywords: Indigenous knowledge systems, Entrepreneurship, Business resilience, Post-COVID-19, Sustainable development, Uganda

The Moderating Role of Financial Literacy in the Relationship Between Fintech Usage and Inclusive Growth Among Women in Agribusiness in Central Uganda

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ABSTRACT

The study's motivation stems from the recent high economic growth rates worldwide, which have often failed to guarantee universal access to benefits, alleviate poverty, or reduce unemployment and inequality. Uganda has continued to face gender disparities in employment, income and access to finances, despite government initiatives to foster inclusive growth for women entrepreneurs. This undermines women's empowerment, financial well-being, and decision-making. Pursuing inclusive growth is essential to advancing the UN SDGs, particularly SDG 5-Gender Equality, SDG 8-Decent Work and Economic Growth, and SDG 10-Reduced Inequality, as well as achieving Africa's Agenda 2063 and Uganda's Fourth NDP framework.

This study aims to evaluate the role of fintech usage in fostering inclusive growth, with financial literacy among women in agribusiness in Central Uganda as a moderating factor. And this is justified by prior studies, which have often treated FinTech usage in isolation, without considering the moderating factors' influence on inclusive growth. FinTech usage in this study is conceptualized in terms of intensity and breadth. Inclusive growth is operationalized as the creation of economic opportunities, empowerment, and financial well-being. Financial literacy is measured across three domains: financial knowledge, attitudes, and behaviors. To ensure robustness, the analysis incorporates control variables such as age, education, marital status, and income levels.

The study is grounded in the Unified Theory of Acceptance and Use of Technology, which highlights factors that influence technology use, such as performance expectancy and effort expectancy. FinTech's benefits increase access to financial services and economic participation, fostering inclusive growth. However, the ability to fully leverage these opportunities depends on individuals' skills and knowledge to navigate the complexities of FinTech. Recognizing this, the research integrates human capital theory to highlight the critical role of financial literacy in enhancing FinTech usage for business success and sustainable inclusive growth.

Guided by a positivist philosophy, the study adopts an explanatory research design with a quantitative approach. Data was collected via closed questionnaires from women entrepreneurs in agribusiness in Central Uganda. A sample of 100 women agribusiness owners from the Buganda and Kampala sub-regions

was selected using systematic sampling. The survey instrument collected data on FinTech usage, financial literacy, and inclusive growth. To analyze the relationships among these variables, descriptive statistics, Pearson correlation, and multiple regression techniques were employed. The findings reveal that FinTech usage significantly enhances inclusive growth among women engaged in agribusiness in Central Uganda. Moreover, financial literacy exerts a strong positive influence on inclusive growth and plays a critical moderating role, amplifying the impact of FinTech usage on inclusive growth outcomes. These results underscore the importance of both digital financial tools and financial literacy in fostering inclusive economic development for women entrepreneurs in the region.

The study provides empirical evidence that is highly relevant to policymakers, regulators, and practitioners, offering strategic insights on how to expand FinTech usage and strengthen the financial literacy of women in agribusiness. By doing so, stakeholders can foster inclusive growth and ensure that digital financial innovations translate into broader economic empowerment.

Keywords: Financial literacy, fintech, inclusion

FDI Productivity Fortunes? Empirical Evidence from Uganda's Manufacturing Sector

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ABSTRACT

This paper examines whether, and the conditions under which, inward foreign direct investment (FDI) generates productivity spillovers for domestic manufacturing firms in Uganda. We adopted a two-step System GMM to estimate a dynamic production model, employing firm-level administrative tax panel data from the Uganda Revenue Authority (2014-2022) and World Bank governance indicators. Findings showed that FDI does not automatically raise domestic firms' productivity. Instead, FDI spillovers are strongly dependent on the size, technological proximity, and absorptive capacity of domestic firms. In contrast, competition effects were found to dominate, whereby increased foreign presence intensifies market pressure and leads to the exit or contraction of less productive local firms. Positive spillovers were also found to be constrained by limited forward and backward linkages. These findings indicate that, in low-income industrial contexts, FDI may reinforce firm heterogeneity rather than broadly upgrading domestic productivity. The conclusions underscore the role of complementary policies that enhance institutional quality, strengthen local-foreign links, and expand firm capacities to convert FDI inflows into inclusive industrial development.

Keywords: Foreign direct investment, Productivity, Spillovers, Firm size, absorption capacity, and Manufacturing sector

Credit Risk Management Practices and Loan Portfolio Quality in Uganda's Commercial Banks. A Survey of Selected Commercial Banks

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ABSTRACT

Background: Extending loans and advances to borrowers ranks as the primary business of commercial banks across the globe and as such lending is the core source of income for banks through earnings of interest income by the credit multiplication process. However, loan portfolio quality in commercial banks continues to decline despite measures commercial banks put in place to maintain the desired asset quality.

Problem Statement: Despite growth in loan activity and geographical coverage, Uganda's banking sector continues to trade with growing volume of NPLs and increasing risk of loan loss. The specific loan loss provisions grew by almost 10% from 37.75% in 2020 to 47.18% in 2024. The country's banking sector has also over the years seen mergers, acquisitions, takeovers as well industrial exits due to the declining primary asset quality (Bank of Uganda, Annual Supervisory Report, 2024). Yet all this manifests amidst continued execution of credit risk management practices.

Methodology: A pragmatic mixed methods strategy combining both qualitative and quantitative approaches was adopted. Quantitative data were collected from 225 bank staff drawn from twelve (12) departments in seven (7) commercial banks using structured questionnaires, while qualitative data were obtained through 3 key informant interviews Managing Directors and Heads of Credit. Quantitative data were analyzed using Structural Equation Modeling and Hierarchal Moderated Multiple Regression analysis, while qualitative data were analyzed thematically. Findings from both strands were integrated during interpretation.

Results: Findings indicate that Credit risk identification (CRI) and Credit risk monitoring and controls (CRM) significantly affected loan portfolio quality (LPQ) in Commercial banks before and after moderation with adverse selection (ADS). In particular, CRI showed a prediction of $\beta = 0.493$, $p < 0.05$ and $\beta = 0.284$, $p < 0.001$ before and after moderation respectively. Relatedly, CRM showed a prediction power of $\beta = -0.621$, $p < 0.05$ and $\beta = -0.422$, $P < 0.05$ before and after moderation respectively. However, CRA exhibited a statistically insignificant direct effect on LPQ ($\beta = 0.517$, $p = 0.429 > 0.05$). Surprisingly, upon moderation with ADS the effect became statistically significant ($\beta = 0.343$, $p < 0.05$). Overall, results indicate that ADS significantly moderated the effect of CRMP on LPQ in commercial banks with interaction terms of $\text{CRI} \times \text{ADS} = -0.367$, $p < 0.05$; $\text{CRA} \times \text{ADS} = -0.337$ and $\text{CRM} \times \text{ADS} = -0.422$, $p < 0.05$ respectively.

Conclusion: CRI and CRM significantly predict LPQ while CRA is insignificant in predicting LPQ in commercial banks. ADS significantly moderated the effect of CRMP on loan portfolio quality.

Keywords: Credit Risk Management Practices, Loan Portfolio Quality, Adverse Selection, Mixed Methods, Commercial Banks

Indigenous Knowledge-Based Entrepreneurship and Business Resilience Post-Covid19 in Africa

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ABSTRACT

Businesses that combine innovation and tradition can promote inclusion, long-term resilience, and economic recovery, establishing indigenous knowledge systems as crucial to sustainable development in post-pandemic Africa. In the wake of COVID-19, this study examines the dynamic relationship between business resilience and indigenous knowledge-based entrepreneurship, concentrating on the experiences of micro, small, and medium-sized firm (MSME) owners in Mbarara, Uganda. To give a thorough analysis, the study uses a cross-sectional research design using mixed methods, combining qualitative and quantitative techniques. A sample of 260 small business owners provided the data, which shed light on the resilience strategies used by Indigenous business owners to deal with post-pandemic difficulties.

To assess linkages and identify important drivers of resilience among Indigenous knowledge-based firms, the study used descriptive analysis in conjunction with Pearson correlation, linear regression, and ANOVA testing using SPSS 17.0. Results show that by encouraging adaptive innovation, community resilience, and sustainable growth, Indigenous knowledge systems play a major role in post-pandemic recovery. These elements enable companies to create frameworks that reduce future risks and maintain flexibility during difficult times.

This paper recommends that African governments and policymakers are to create frameworks that acknowledge and promote indigenous knowledge systems as being essential to economic resilience. Such policies can serve larger objectives for equitable and sustainable economic development by fostering the expansion of robust, culturally-rooted companies by integrating traditional practices into official economic frameworks. In a changing global economy, acknowledging and encouraging local entrepreneurship can be extremely important for bolstering Africa's economic stability and environmental sustainability.

THEME 6:
CLIMATE ACTION ENVIRONMENTAL SUSTAINABILITY
AND GREEN TECHNOLOGIES

Empowerment and Perceptions of Women on Health Effects and Adoption of Clean Cooking Technologies in Urban and Peri-Urban Southwestern Uganda

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ABSTRACT

Women's empowerment plays a crucial role in the adoption of Clean Cooking Technologies (CCTs). However, there are limited studies in which empowerment domains and perceptions of women on health impacts have been used to explain the adoption of CCTs. In this study, we assessed the influence of women's empowerment and their perceptions on health effects on the adoption of LPG, electric and biomass cooking technologies in Southwestern Uganda. Data were collected from 387 female household members using a cross-sectional survey in Mbarara and Isingiro. Data were analysed using Excel to calculate the index for each participant based on the empowerment and health indicators. The indices were input into STATA19 and conducted a multivariate regression for the three CCTs. The adopters of biomass briquettes=21.2%, electric cooking=26.4%, and LPG cooking=28.9%, although this adoption rate combined primary, secondary and use as any other alternative. Results from the regression model show that CCTs are influenced by empowerment domains differently, with leadership in the community showing a negative influence on the adoption of electric cooking. In addition, education, age, and living in an urban area increase the likelihood of adoption of CCTs. The influence of perceptions on health moderated by the composite empowerment index was only significant for the adoption of electric cooking. Empowerment has a bearing on adoption, although the influence varies across different CCTs. Future studies could explore the direct influence of empowerment and perceptions on health effects for each CCT, since our study did not study the influence directly.

Keywords: Clean cooking technologies, Women's empowerment domains, Adoption, Health perceptions, Empowerment index

City Residents' Solid Waste Management Knowledge, Attitude and Practices (Kaps) and Climate Smart Innovations in Gulu City, Uganda

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ABSTRACT

Solid waste management (SWM) constitutes a big challenge in cities as their large populations and municipal activities generate high volumes of solid waste. Most solid waste is disposed in gardens, pits, drainages and open dump sites adding to hydrologic and atmospheric pollution; negatively affecting public health, economic, environmental and social environments. SWM which entails, waste minimization; collection and transportation; treatment and processing; and disposal, provides climate protection, economic and social benefits. Residents' KAPs refers to their knowledge and attitude towards SWM, and their actual behaviours (practices) towards it. SWM falls under SDG 11 which advocates for sustainable cities that are free from environmental hazards; and SDG 13 which advocates for climate action through effective SWM to mitigate climate impacts. Gulu City collects only 40% of garbage generated daily with the balance causing blockage of drainage channels, degradation of wetlands, water and air pollution, and spread of diseases. This study focused on how residents' KAPs are contributing towards addressing the SWM problem through climate-smart initiatives namely, prevention practices that focus on waste minimization; end-of-pipe strategies that entail economic value recovery from waste; and environmental restoration practices. A desk review approach was adopted. Data were sourced from official websites, online peer-reviewed journals and descriptive analysis conducted. It was established that innovative climate-smart SWM is practiced in Gulu City. Under the circular economy innovation, Takataka Plastics project is transforming plastic waste into durable construction tiles while Green Growth Plus Investment is using black soldier fly larvae to convert organic waste into high-protein animal feed; under Public-Private-Partnerships (PPP), the City has partnered with local companies like Smart Garbage and Green Homes Transformation in waste collection; under the waste-to-energy innovations, Earth Energy Company, a biomass gasification plant for conversion of solid waste into electricity is underway. While these innovative climate smart SWM projects have demonstrated the potential of minimizing the SWM problem through residents' KAPs, it is recommended that more initiatives and of larger magnitude be initiated to further address the challenge.

Keywords: Solid Waste Management, climate smart innovations, Residents KAPs, Gulu City

Assessing the Effect of Climate Change on Water Resources Management in Uganda: A Policy Analysis of Resilience Strategies in The Face of Environmental Uncertainty

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ABSTRACT

Uganda's water resources are increasingly under threat from the impacts of climate change, including erratic rainfall patterns, prolonged droughts, floods, and temperature variations. These changes not only strain water availability but also compromise the sustainability of agriculture, energy production, and public health. This paper analyzes Uganda's water resource management policies through the lens of climate resilience. It identifies policy gaps, evaluates institutional frameworks, and proposes strategies to enhance adaptive capacity. Using a qualitative policy analysis approach, the paper reviews national strategies, regulatory frameworks and stakeholder roles, concluding with recommendations for strengthening resilience to environmental uncertainty in Uganda

Keywords: Climate change, water resources management, environmental uncertainty and resilience strategies

Gendered Perceptions of Green Charcoal: The Benefits and Challenges Shaping Adoption of a Clean Cooking Technology in Northern Uganda

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ABSTRACT

Green charcoal clean-burning briquettes made from carbonized agricultural residues and organic waste are a promising green technology for reducing deforestation, greenhouse-gas emissions, and household air pollution in sub-Saharan Africa. Whether such an environmentally sustainable technology is adopted, however, depends heavily on how men and women perceive its benefits and challenges. This study examined the gendered perceptions of green charcoal among households in Northern Uganda and their implications for climate action and clean-energy transitions. Guided by an interpretivist paradigm and a qualitative case-study design, the study was conducted across Amuru District, Gulu City and Adjumani District including refugee-hosting communities drawing on 102 responses from in-depth interviews, focus group discussions, key-informant interviews and observation, analysed thematically. Four themes emerged. First, gendered labour framed perception: women, who “fetch firewood every morning” and regard cooking as “our role,” judged green charcoal through a daily-use lens (smoke, speed, safety), while men judged it by cost and outcome. Second, perceived benefits were consistent across sites—green charcoal produces “no smoke,” cooks faster, lasts longer, and is safer than firewood, with income potential where briquettes are sold. Third, perceived challenges clustered around cost, thin or collapsed local supply (in one site dependent on a single external source), and stove-design and usability concerns such as lighting time, ash and aeration. Fourth, education and household headship shaped openness: educated, income-secure heads were more receptive to change but often bypassed green charcoal for gas, while headship gatekept whether the technology was tried at all. The study concludes that advancing environmentally sustainable cooking technologies requires gender-tailored messaging that speaks to women’s daily-use priorities and men’s cost concerns, alongside reliable local supply and affordable, user-friendly stoves. Recognising these gendered perceptions is essential for equitable climate action, environmental sustainability and the uptake of green technologies in displacement-affected communities.

Keywords: green charcoal; gendered perceptions; clean cooking technology; environmental sustainability; climate action; Northern Uganda

Redefining Waste as a Climate-Smart Resource: Insights from Gulu City Landfill through the Kalenzi Rogers Runyunyuzi Amooti Waste Resource Framework

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ABSTRACT:

The growing challenge of urban waste management in Africa is increasingly linked to climate change, environmental degradation, and unsustainable consumption patterns. However, the prevailing perception of waste as an unusable by-product continues to limit innovative and climate-responsive solutions. Drawing from a one-year experiential engagement at the Gulu City landfill—handling approximately 152 tons of solid waste daily—this paper reframes waste as a climate-smart resource with significant environmental, economic, and social value.

Through observational analysis and practical interaction with landfill systems, the study identifies multiple high-potential waste streams including organic matter, plastics, metals, glass, and textiles. Evidence from field experience demonstrates diverse and scalable transformation pathways such as composting, anaerobic digestion for biogas production, recycling, refuse derived fuels, briquette production, landfill gas recovery, and material repurposing for construction and industrial use. These pathways illustrate that waste streams can generate solid, liquid, and gaseous outputs that meet needs across agriculture, energy, industry, and households.

The paper introduces the Kalenzi Rogers Runyunyuzi Amooti Waste Resource Framework, a structured model anchored on three pillars: (1) Resource Identification; (2) Value Transformation; and (3) Market Reintegration.

The study argues that inefficiencies in waste management systems are primarily driven by mindset limitations, weak policy implementation, and underdeveloped value chains rather than lack of resource potential. It advocates for decentralized waste systems, integration of informal actors, and investment in waste valorization technologies as key drivers of climate-smart innovation. This paper contributes to the climate change and climate-smart innovation discourse by demonstrating how structured waste-to-resource systems can reduce emissions, conserve resources, create employment, and promote circular economies in rapidly urbanizing African cities.

Keywords: Climate Smart Waste Management, Circular Economy, Waste-to-Resource, Waste Valorization, Sustainable Development, Urban Resilienc

Relationship Between Land Use, Seasonality, Hydrological Conditions, and the Adsorption of Sulfamethoxazole, Ciprofloxacin, and 17 β -Estradiol onto Polyethylene Terephthalate Microplastics in a Small Urban River System, Eastern Cape, South Africa

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ABSTRACT

Microplastics (MPs) are increasingly recognised as vectors for the transport of organic contaminants in aquatic environments. However, the influence of land use, seasonal variation, and hydrological conditions on contaminant adsorption onto MPs remains poorly understood, particularly in small urban river systems of Africa.

This study investigated the adsorption of sulfamethoxazole (SMX), ciprofloxacin (CIP), and 17 β -estradiol (E2) onto polyethylene terephthalate (PET) microplastics in the Bloukrans River, Eastern Cape, South Africa. PET MPs were deployed in situ at four sites representing different land-use types (municipal, wastewater treatment works, agriculture, and a control site) during summer and autumn, retrieved after exposure, and analysed for adsorbed contaminants using liquid chromatography–tandem mass spectrometry (LC–MS/MS). The effects of land use, seasonality, and hydrological variables on contaminant adsorption were evaluated using analysis of variance and regression analyses.

SMX adsorption differed significantly among sampling sites ($F(3,16) = 4.161$, $p = 0.0234$) and between seasons ($F(1,16) = 7.202$, $p = 0.016$), with the highest adsorption occurring at the wastewater- and agriculture-impacted sites and autumn concentrations exceeding those in summer by 176.5 ng g⁻¹. CIP adsorption varied significantly among sites ($p = 0.0231$) but showed no significant seasonal differences. In contrast, E2 adsorption did not differ significantly across either land-use types or seasons ($p > 0.05$). Hydrological analyses revealed that river width was a significant predictor of CIP adsorption, whereas SMX and E2 adsorption showed no significant relationships with the measured hydrological variables.

These findings provide important in situ evidence that land use, seasonal variability, and hydrological conditions collectively influence the adsorption behaviour of organic contaminants on PET microplastics in small urban rivers. The study improves understanding of the environmental factors governing contaminant–microplastic interactions and highlights the potential role of PET microplastics as vectors for emerging contaminants in freshwater ecosystems.

Household Living Conditions and Environmental Sustainability: Evidence from Afrobarometer Survey Data in Uganda

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ABSTRACT

Environmental sustainability and quality of life remain critical pillars of sustainable development, particularly in developing countries where environmental degradation directly affects household welfare. This study examined the relationship between household living conditions and perceptions of environmental sustainability using secondary data from the 2024 Afrobarometer Survey conducted in Uganda. The study analyzed responses from 2,400 adults selected through a nationally representative probability sampling design. Descriptive statistics, cross-tabulations, Chi-square tests, Cramer's V, and multinomial logistic regression were employed to examine the association between living conditions and perceived environmental challenges. The descriptive findings revealed that 55.2% of respondents reported poor living conditions, while only 35.9% rated their living conditions as good. Deforestation emerged as the most important environmental concern (49.9%), followed by waste disposal (20.1%) and pollution of water sources (10.8%). Cross-tabulation results indicated that concern for deforestation was consistently high across all age groups and living-condition categories. Multinomial logistic regression results showed that household living conditions were significantly associated with the type of environmental issue prioritized after controlling for age and other demographic characteristics ($p < 0.05$), indicating that socioeconomic conditions influence environmental perceptions. The findings underscore the need for integrated policies that simultaneously improve household welfare and strengthen environmental conservation, particularly through forest protection, sustainable waste management, and community-based natural resource management.

Keywords: Environmental sustainability; Quality of life; Living conditions; Environmental perceptions; Afrobarometer; Uganda.

Climate Action, Environmental Sustainability, and Green Technologies: Pathways to Sustainable Development in the Twenty-First Century

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ABSTRACT

Climate change has emerged as one of the most pressing global challenges of the twenty-first century, with far-reaching consequences for ecosystems, human health, food systems, biodiversity, economic stability, and social cohesion. Increasing global temperatures, rising greenhouse gas emissions, widespread deforestation, land degradation, pollution, and unsustainable patterns of production and consumption have intensified environmental pressures, underscoring the urgent need for coordinated and sustained climate action at global, regional, national, and local levels. In response, environmental sustainability and green technologies have become central pillars in global development discourse, offering viable pathways for mitigating climate change while simultaneously fostering inclusive economic growth and long-term sustainable development. This paper critically examines the interrelationship between climate action, environmental sustainability, and green technologies, emphasizing their collective contribution to the achievement of the Sustainable Development Goals (SDGs). Particular attention is given to SDG 7 (Affordable and Clean Energy), SDG 9 (Industry, Innovation and Infrastructure), SDG 11 (Sustainable Cities and Communities), SDG 12 (Responsible Consumption and Production), SDG 13 (Climate Action), SDG 15 (Life on Land), and SDG 17 (Partnerships for the Goals). By linking environmental objectives with broader development priorities, the paper highlights the integrated nature of sustainability challenges and responses in contemporary global governance. The study synthesizes existing literature on global and regional climate policies, environmental governance frameworks, and technological innovations that support sustainable development. It explores key thematic areas including renewable energy systems, circular economy models, green infrastructure development, sustainable agriculture, climate-smart technologies, digital environmental innovations, and ecosystem restoration initiatives. Special emphasis is placed on the experiences of developing countries and Sub-Saharan Africa, where climate vulnerability is high despite relatively low contributions to global emissions, and where green technologies present both transformative opportunities and implementation challenges. Findings from the review indicate that while significant progress has been made in advancing renewable energy deployment, environmental policy formulation, and technological innovation, substantial barriers persist. These include

inadequate climate financing, weak institutional capacity, limited access to advanced technologies, insufficient infrastructure, and gaps in public awareness and behavioral change. Addressing these constraints requires coherent and integrated policy frameworks, strengthened governance systems, expanded investment in research and innovation, and enhanced collaboration between public and private actors. The paper further argues that achieving long-term environmental sustainability is contingent upon scaling up climate finance, fostering inclusive public-private partnerships, promoting technology transfer, and strengthening community participation in environmental management. It concludes that effective climate action depends on coordinated efforts among governments, development partners, research institutions, the private sector, and local communities to accelerate the global transition toward resilient, low-carbon, and environmentally sustainable economies.

Keywords: Climate action, environmental sustainability, green technologies, climate change, renewable energy, circular economy, sustainable development, climate resilience, green innovation, environmental governance.

Rwizi Feedback Application: Empowering Local Communities and Conservation Representatives to Report, Verify, and Act on Environmental Incidents

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ABSTRACT

Environmental degradation poses a significant ecological and economic threat to Uganda's sustainable developmental goals. This proposal outlines a sustainable, community-based application to transform this environmental menace into the ecosystems. The Rwizi Feedback Application is an environmental conservation platform designed to empower local communities and conservation representatives in Uganda's Rwizi region to collaborate in addressing environmental challenges. The application facilitates a streamlined three-stage process: incident reporting, verification, and action planning. Community members can report various environmental incidents, including poaching, deforestation, illegal logging, pollution, wildlife sightings, and natural disasters, through a mobile app with GPS location tagging and photo/video documentation in both local and English languages. The platform offers anonymous reporting options to encourage participation without fear of reprisal, along with real-time status tracking and automated notifications to keep reporters informed of actions taken. Area Representatives serve as intermediaries, receiving community reports and conducting on-site verifications or photo validations. They can add detailed notes, supporting evidence, and priority tags (urgent/non-urgent) before escalating verified incidents to regional management. Regional Representatives oversee the incident resolution process by reviewing validated reports, assigning tasks to specific action groups, developing comprehensive action plans, and tracking resolution progress. They benefit from an analytics dashboard providing insights into incident patterns, hotspot mapping, and seasonal trend analysis, with capabilities to generate PDF or Excel reports. The administrative panel offers comprehensive system control, including user management across all roles, robust report analytics, and automated alerts for specific incident patterns to enable proactive intervention. Through streamlined incident management, reduced response times, and data-driven decision-making capabilities, it empowers communities and fosters local environmental ownership while raising awareness about regional issues. The platform employs robust security measures, including AES-256 encryption, TLS 1.3 protocols, multi-factor authentication, role-based access control, and regular third-party penetration testing to protect sensitive environmental and user data.

Keywords: Incident Reporting, environmental incidents, Hot Spot Mapping, Environmental Conservation

Characterization, Sources and Risk Assessment of Transport-Related Particulate Matter PM_{2.5}-Bound Polycyclic Aromatic Hydrocarbons (PAHs) among Commercial Motorcyclists in a Rapidly Growing Urban Environment: The case of Kampala City

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ABSTRACT:

Background: Polycyclic aromatic hydrocarbons (PAHs) are toxic by-products of incomplete combustion that readily adsorb onto fine particulate matter (PM_{2.5}), enhancing their penetration into the respiratory tract and increasing the risk of adverse health effects. In rapidly urbanizing cities such as Kampala, transport emissions constitute a major source of PM_{2.5}-bound PAHs, placing commercial motorcyclists at elevated risk due to prolonged exposure within traffic corridors. This study aimed to characterize PM_{2.5}-bound PAHs, identify their emission sources, and evaluate their ecological and human health risks among commercial motorcyclists in Kampala City.

Methodology: Fifteen priority PAHs bound to PM_{2.5} were quantified. Emission sources were identified using diagnostic ratios, principal component analysis with absolute principal component scores–multiple linear regression (PCA/APCS-MLR), and chemical mass balance (CMB) modeling. Toxicological impacts were assessed using toxic equivalent quotient (TEQ) and mutagenic equivalent quotient (MEQ), while ecological risks were evaluated using risk quotient (RQ) and ERM/PEL approaches. Human health risks were estimated using incremental lifetime cancer risk (ILCR) and hazard index (HI).

Results: All PAHs exhibited M-ERM-Q, M-PEL-Q, RQNC, and RQMPC values greater than one, indicating high ecological risk, particularly from chrysene, benzo[k]fluoranthene, benzo[a]pyrene, and benzo[a]anthracene. ILCR values for ingestion and dermal exposure exceeded the acceptable threshold (10⁻⁶), while HI values were greater than one, indicating significant

non-carcinogenic risks. Diagnostic ratios, PCA/APCS-MLR, and CMB consistently identified traffic emissions, biomass burning, and road dust as the dominant PAH sources, with minimal petrogenic contributions. TEQ and MEQ analyses identified dibenzo[a,h]anthracene and benzo[a]pyrene as the principal contributors to carcinogenic and mutagenic potential.

Conclusion: Transport-related PM_{2.5}-bound PAHs in Kampala present substantial ecological and public health risks. Targeted interventions to reduce combustion-derived emissions are urgently needed to improve urban air quality and protect vulnerable populations, particularly commercial motorcyclists.

Keywords: Diagnostic ratio, Toxicity Equivalent Quotient, Incremental Lifetime Cancer Risk, Risk Assessment.

THEME 7:
ENTREPRENEURSHIP, INNOVATION AND RESEARCH
COMMERCIALIZATION

Job Quality Index and Private Sector Work Environment in Low-Income Economies.

Kayaga

ABSTRACT

Entrepreneurship in sub-Saharan Africa is creating the biggest employment vehicle through private sector employment (Buba, 2019). As more people innovate, they create enterprises to deliver the services and products to the market, having to create more jobs. Attention should be given to the quality of jobs being created to align with the sustainable development goal of increasing access to decent work.

Job quality has emerged as a defining concern in contemporary labor market research. Yet the dominant multidimensional frameworks, including those advanced by the OECD, Eurofound, and the International Labour Organization, have been developed largely on the basis of Global North experience, where formal contracts, collective bargaining, and welfare protection underpin the meaning of good work. This thesis investigates how job quality manifests in the very different institutional setting of sub-Saharan Africa, where informal employment dominates and private sector workplaces of varying size absorb the majority of nonagricultural labour. Using Uganda as a focal case, the study develops and tests a contextual Job Quality Index tailored to private sector workplaces in low-income economies.

A positivist, deductive, cross-sectional survey design was employed. A questionnaire adapted from the United Kingdom Skills and Employment Survey was administered through three national gatekeeper bodies the Uganda Manufacturers Association, the Federation of Uganda Employers, and the Human Resource Managers Association of Uganda targeting organisations in private sector. After data cleaning, 413 valid employee responses formed the principal analytic sample, with subsamples of 404 and 395 employees used in two focused empirical analyses. Sixty three observed items spanning nine conceptual domains were entered into an Exploratory Factor Analysis using Principal Axis Factoring with Varimax rotation (KaiserMeyerOlkin = 0.854; Bartlett's chisquare = 8,095.05, $p < .001$), yielding a robust ten factor Job Quality Index ranging from Workplace Justice and Environment to Career Growth and Aspiration. Two follow up analyses — a binary logistic regression of subjective salary adequacy and an ordered logistic regression of fairness satisfaction with bootstrap mediation interrogated the mechanisms underpinning the index.

The results converge on a single, original finding: job quality in Ugandan private sector workplaces is relationally intensive. Perceived pay fairness (OR = 2.220, $p < .001$) and the receipt of a pay slip (OR = 2.189, $p = .002$) emerged as the strongest correlates of salary adequacy, while the manager–employee relationship mediated the link between long term contracts and fairness satisfaction (indirect

effect = 0.0229, 95% bootstrap confidence interval [0.0023, 0.0497]). Pay levels and formal contracts alone proved insufficient. Theoretically, the findings integrate the Skills and Employment Framework with Institutional Theory, Social Exchange Theory (and its Leader–Member Exchange extension), and the Capability Approach, demonstrating how relational governance substitutes for institutional voids in low-income labour markets. Methodologically, the thesis offers a transferable Job Quality Index architecture for sub-Saharan Africa. Practically, it calls for the institutionalization of the Job Quality Index within the Ministry of Gender, Labor and Social Development and the Uganda Bureau of Statistics, the universalization of payslip provision, and the systematic training of workplace managers in interactional justice.

Keywords: Job quality; Decent Work; Job Quality Index; Skills and Employment Framework; Perceived Pay Fairness; Job Security; Manager–Employee Relationship; Capability Approach.

THEME 8:
EDUCATION, POLICY, LEADERSHIP AND RESEARCH
CAPACITY BUILDING

Teachers' Pedagogical Knowledge, Attitudes, and Practices as Predictors of Quality Physical Education in Lower Secondary Schools in Uganda

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ABSTRACT

Quality Physical Education (QPE) is steadily being recognised as fundamental for promoting lifelong physical activity and holistic learner development. However, the efficacy of QPE largely depends on teachers' pedagogical competence. This study investigated the relationships between pedagogical knowledge, attitudes, and practices (KAPs) on the teaching of quality Physical Education (PE) in lower secondary schools in Central Uganda. Using a mixed-methods approach, a sample of 37 PE teachers from 37 secondary schools was surveyed using a structured questionnaire that assessed pedagogical knowledge, attitudes, and practices of PE teachers. Utilizing a quantitative approach, a correlational analysis was conducted using Spearman's correlation coefficient to assess the relationships among various KAPs components while hierarchical regression analysis was used to examine the contributions of KAPs to teaching QPE. The findings reveal a moderate positive correlation between pedagogical knowledge (PK) and teaching of QPE ($r = 0.452$, $p < 0.01$), with pedagogical content knowledge emerging as the strongest predictor ($r = 0.560$, $p = 0.000$). Additionally, cognitive attitudes showed a significant positive correlation with teaching of QPE ($r = 0.518$, $p = 0.001$), highlighting the influence of teachers' beliefs on instructional effectiveness. Indicating that teachers' PK and attitudes significantly influence instructional practices and the delivery of QPE. However, situational challenges such as limited resources and inadequate professional development restrain effective implementation. These findings underscore the importance of enhancing teachers' PK and practices to improve QPE. The results suggest that enhancing teachers' KAPs through targeted professional development is essential for improving PE instruction quality and fostering student engagement and this has implications for teacher training and educational policy. These findings contribute to the growing body of literature on physical education pedagogy in developing contexts.

Keywords: Quality Physical Education, pedagogical knowledge, teaching practices, teacher attitudes, physical education pedagogy

Competence Mapping and Staff Retention in Public Universities in Uganda: Evidence from Makerere, Kyambogo, and Uganda Management Institute

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ABSTRACT

Background: Competence mapping is gradually recognised as a critical talent management practice in improving staff retention and institutional stability. In Uganda, initiatives have been implemented in public universities to reduce staff turnover; however, empirical evidence on its effectiveness remains limited.

Problem Statement: Despite increasing investments by government through increased remuneration for staff in public universities in Uganda, these institutions continue to experience increased staff turnover. Limited attention paid to competence mapping as a strategy for enhancing staff retention may contribute to high staff turnover. This study therefore examined the effect of competence mapping on staff retention in public universities in Central Uganda.

Methodology: A convergent mixed-methods design was employed where quantitative data was supported by qualitative data. Quantitative data were collected from 346 academic and administrative staff using structured questionnaires, while qualitative data were obtained from 15 key informant interviews involving deans, heads of departments, and human resource directors. Quantitative data were analysed using Structural Equation Model (SEM), while qualitative data were analysed thematically. Findings from both strands were integrated during interpretation.

Results: Quantitative findings revealed that competence mapping had a significant positive effect on staff retention ($\beta = 0.39$, $p < .003$), with Model indices (CFI=0.957, TLI=0.952, PNFI=0.890, RMSEA=0.049, SRMR=0.061, GFI=0.982). Qualitative findings also indicated that effective alignment of staff competencies with job requirements enhances commitment hence reducing turnover intentions.

Conclusion: Competence mapping significantly contribute to improved staff retention in public universities. Effective competence mapping by public universities through utilisation of competency-based recruitment and deployment can improve staff retention.

Keywords: Competence Mapping, Staff Retention, Public Universities, Uganda.

Cultivating Minds Within Institutional Walls: A Systematic Review of Formative Assessment Practices Shaping Learning at Bishop Stuart University

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ABSTRACT

Background: Assessment practices constitute a critical component of pedagogical effectiveness in higher education institutions. Bishop Stuart University (BSU), a faith-based institution in South Western Uganda, has undergone significant transformation since its establishment, yet empirical evidence regarding its formative assessment practices remains limited. This systematic review examined the institutional pedagogy and assessment frameworks at BSU, with particular focus on formative assessment implementation, effectiveness, and alignment with contemporary educational standards.

Objective: To systematically review and synthesize evidence on formative assessment practices at Bishop Stuart University, examining policy frameworks, implementation patterns, stakeholder experiences and learning outcomes.

Methods: Following PRISMA guidelines, this systematic review included institutional documents, published research, grey literature, and empirical studies related to BSU's assessment practices from 2010-2025. Electronic databases were searched using predetermined criteria. Quality assessment employed the Mixed Methods Appraisal Tool. Thematic synthesis was conducted following Cochrane guidelines for qualitative evidence synthesis.

Results: 23 sources met inclusion criteria, comprising institutional policy documents (n=7), empirical studies (n=8), quality assurance reports (n=5), and stakeholder surveys (n=3). Findings reveal that BSU has established comprehensive assessment policies emphasizing continuous assessment including quizzes, group assignments, class presentations and feedback. However, implementation consistency varies across faculties, with Education and Social Sciences demonstrating more robust formative practices than Sciences and Business. Key challenges include faculty pedagogical capacity, student-faculty ratios averaging 1:45, and tension between formative ideals and summative pressures. Enabling factors include institutional Christian values emphasizing holistic development, supportive administrative leadership, and emerging communities of practice among faculty.

Conclusion: While BSU has developed progressive assessment policies reflecting international best practices, actualizing formative assessment principles requires sustained investment in faculty development, resource allocation, and cultural transformation. The institution's faith-based mission and relatively smaller size compared to public universities provide unique opportunities for assessment innovation.

Keywords: Formative assessment, Institutional pedagogy, Assessment practices, systematic review.

Influence of Family Structure on Community Policing Strategy in Kampala Metropolitan Policing South Uganda

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Introduction

Community policing remains a cornerstone of crime prevention in Uganda, yet its effectiveness varies considerably across communities despite sustained implementation. Existing studies have largely attributed these differences to institutional and operational factors while paying limited attention to the influence of family structures. This study examines how family structures shape community policing outcomes in Kampala Metropolitan South, Uganda. Specifically, it investigates the influence of nuclear, extended, single-parent, and child-headed households on community engagement, informal social control, youth behaviour, police–community trust, and crime reporting.

Methodology

The study is anchored in Social Control Theory, Systems Theory, and Community Policing Theory, which collectively explain how household dynamics influence individual behaviour, institutional relationships, and community safety. A mixed-methods research design will be employed, combining household surveys, key informant interviews, and documentary analysis to generate both quantitative and qualitative evidence.

The study argues that the family is the first institution of crime prevention and that variations in household structure significantly influence community participation in policing initiatives. It proposes a family-sensitive community policing framework that integrates parenting support, household engagement, youth mentorship, and stronger police–family partnerships into crime prevention strategies.

The anticipated findings are expected to contribute to criminological theory, public administration, and policing practice by demonstrating that effective community policing depends not only on police capacity but also on the strength, stability, and engagement of families. The study will provide evidence-based policy recommendations for the Uganda Police Force, the Ministry of Internal Affairs, local governments, and other stakeholders seeking to strengthen community safety through household-centred policing approaches.

Procurement Planning on Public Service Delivery in Local Governments: Evidence from a Structural Equation Modelling Analysis

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ABSTRACT:

This study investigated the effect of procurement planning on public service delivery in terms of needs identification, market assessment, and procurement scheduling. A quantitative research design was used for the analysis. Primary data were collected from 181 respondents in Jinja City using a structured questionnaire. To evaluate the construct validity and reliability of the measurement model, exploratory and confirmatory factor analyses were performed on the data. Structural Equation Modeling (SEM) using SPSS version 29, JASP 0.95.4.0, and Onyx was conducted to examine the relationships among the study variables. The results of the measurement model show that the model exhibited very high goodness-of-fit indices (CFI = 0.990, TLI = 0.985, RMSEA = 0.036, and SRMR = 0.054). The findings of the structural model indicate that procurement planning significantly influences public service delivery. It was also revealed that needs identification positively and strongly influences public service delivery ($\beta = 0.43$), and that procurement scheduling ($\beta = 0.33$) and market assessment ($\beta = 0.21$) also have positive effects. In conclusion, the study indicates that successful procurement planning is essential for enhancing public sector performance and, therefore, suggests the need to incorporate full needs assessment, enhance market intelligence systems, and be realistic about the procurement schedule. The contribution of this study to the field of public procurement and public sector management is empirical evidence, using Structural Equation Modeling, of the effect of procurement planning on public service delivery.

Keywords: Procurement planning; Needs Identification; Market Assessment; Procurement scheduling; Public Service Delivery; Structural Equation Modelling; Local governments. JEL Classification: H57, H83, M11, C30, O22.

Policy Processes and Implementation in Uganda: A Critical Analysis

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ABSTRACT

Policy processes and implementation remain central to the effectiveness of governance and public service delivery in developing countries. In Uganda, significant efforts have been made to design progressive policies across sectors such as health, education, and decentralisation. However, a persistent gap exists between policy formulation and actual implementation outcomes. This paper critically examines the dynamics of policy processes and implementation in Uganda, with a focus on institutional frameworks, stakeholder participation, political influences and administrative capacity.

Drawing on qualitative and desk-based research, the study analyses how policy agendas are set, formulated, adopted, and translated into action. It highlights the role of key actors, including government agencies, development partners, civil society organisations, and local communities, in shaping policy outcomes. The paper further explores systemic challenges such as limited financial resources, weak coordination mechanisms, bureaucratic inefficiencies, and issues of accountability that undermine effective implementation.

The findings reveal that while Uganda has a relatively robust policy frameworks, implementation is often constrained by contextual realities, including political interference, capacity gaps at local government levels, and inadequate monitoring and evaluation systems. The study argues for a more integrated and participatory approach to policy processes, emphasising the need for strengthening institutional capacity, enhancing transparency, and promoting evidence-based decision-making.

The paper contributes to the broader discourse on public policy governance in the Global South by providing practical insights into bridging the gap between intentions and development outcomes. It concludes by recommending reforms aimed at improving policy coherence, stakeholder engagement, and implementation effectiveness in Uganda.

Keywords: Policy processes, policy implementation, governance, public administration, Uganda, decentralization

Multigenerational Work Ethics and Organizational Performance: Evidence from Public Agencies in Uganda

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ABSTRACT

Aim: This research explored how work ethics across different generations relate to the performance of public agencies in Uganda, with a particular focus on whether work values shaped by generational differences impact organizational results.

Design/methodology/approach: The study was based on Generational theory and employed a positivist approach with a cross-sectional multilevel framework. Data collection involved a census of department heads and 367 employees across 74 public agencies. The perceptions of multigenerational work ethics at the individual level were aggregated to the organizational level and examined using Partial Least Squares Structural Equation Modeling (PLS-SEM).

Findings: The results reveal that multigenerational work ethics do not significantly affect the performance of public agencies. Additionally, characteristics of the agencies, such as their size and type, do not correlate with performance differences. In summary, variations in work-related values and ethical orientations across generations do not adequately account for differences in performance among public agencies.

Theoretical contribution: This research broadens Generational theory by empirically examining its assumption that generationally influenced work ethics result in variations in organizational performance within public agencies. The study demonstrates that differences in work values across generations do not significantly forecast performance outcomes in Uganda's public sector. Consequently, the results imply that Generational theory might have limited explanatory capacity for organizational performance unless broader institutional and contextual factors are taken into account.

Practical contribution: The results reveal that simply having diverse generational traits does not inherently enhance agency performance. Instead, improvements in performance are more probable when mediating and moderating mechanisms, especially organizational and contextual elements, are incorporated into management strategies. This highlights the necessity of emphasizing institutional and managerial conditions rather than depending solely on generational makeup as a catalyst for performance enhancement, providing practical insights for human resource management and public administration in developing countries.

Keywords: Work ethics, Public agency performance, Organizational performance, Human resource management, Uganda

From Altruism to Justice: A Christian Ethical Compensation Framework for Research Participant Compensation

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ABSTRACT

Compensation for research participants has long been contested within bioethics, often framed as a tension between altruism and financial motivation. While traditional models positioned altruism as the ethical cornerstone of participation, contemporary scholarship increasingly calls for frameworks that prioritize justice, fairness, and equity. This conceptual paper develops a Christian Ethical Compensation Framework (CECF) that rethinks research participant compensation through the lens of Christian ethical management. Drawing on the Christian ethical management principles of stewardship, servant leadership, and biblical justice, and complemented by Social Exchange Theory and Rawls' Theory of Justice as analytical lenses, the paper integrates bioethics debates with Christian management thought to reconceptualize compensation as a justice-based obligation rather than discretionary generosity. Using an analytical review and conceptual synthesis, the CECF positions participant motivation as an antecedent construct, Christian ethical management principles as a mediating construct, and compensation practices as the outcome construct. Three theoretical propositions are formally derived from the framework, formalizing its claims and inviting empirical testing. The CECF contributes to Christian-based management theory by demonstrating how faith-informed ethics can reshape organizational practices in research oversight, with particular relevance to low-resource, predominantly Christian contexts such as Uganda.

Keywords: Altruism; Justice; Research Participant Compensation; Christian Ethical Management; Conceptual Framework; Stewardship; Servant Leadership; Uganda

A Dialect-Aware Hybrid Corpus Curation Framework (Dhccf) for Low-Resource Languages: An English–Lusoga Case Study

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ABSTRACT:

Natural language understanding-driven machine translation models are limited by the scarcity of high-quality parallel corpora. Existing corpus development approaches have relied on extensive manual translation, standardised language varieties, or machine-assisted translation with limited expert review. Although these methods have helped create more language resources, they have struggled to balance scalability, translation quality, and the preservation of dialect diversity. The paper proposes a dialect-aware hybrid corpus curation framework (DHCCF) to develop high-quality, low-resource parallel corpora. The framework combines existing language resources, human translation, artificial intelligence-assisted translation, and expert linguistic validation.

To demonstrate the framework, advanced Lusoga language students supervised by an expert Lusoga teacher curated an English-Lusoga corpus representing the Lutenga and Lupakoyo dialect clusters. The process began by extracting English source sentences from an existing English-Luganda parallel corpus containing 41,070 sentence pairs. Of these, 15,020 sentences were translated by the students before being subjected to expert linguistic validation by the Lusoga teacher.

To increase the corpus size more quickly, a large language model generated candidate standard Lusoga translations for the remaining 26,050 English sentences. Since the standard Lusoga variety is predominantly based on the Lutenga dialect cluster, the validated translations served as the Lutenga translations in the corpus. The validated translations were then translated into the Lupakoyo dialect cluster by the Lusoga students, followed by a final round of expert linguistic validation before inclusion in the corpus. This hybrid approach to corpus curation leverages the scalability of artificial intelligence while incorporating rigorous human expertise, thereby preserving dialect-specific linguistic features.

Using the framework yields a high-quality parallel corpus that can be used not only for training but also for evaluating English-Lusoga NLU-driven MT models. Beyond the corpus itself, the proposed framework offers a practical and reusable approach to developing dialect-aware corpora for other low-resource languages.

Does Student Financing Build Academic Capacity? Evidence from HESfb Loan Beneficiaries in Ugandan Public Universities

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ABSTRACT

Student financing is widely recognised as a strategic education policy to improve access to higher education and human capital development. In Uganda, the Higher Education Students' Financing Board (HESFB) loan scheme was established in 2014 to support academically qualified but financially disadvantaged students pursuing science, technology, engineering, and mathematics (STEM) programmes. However, there is little evidence on the extent to which the scheme helps students in university study, an important indicator of academic capacity. In this study, we investigated STEM students' views on the HESFB loan scheme and the level of academic engagement among them in selected Ugandan public universities. We conducted a quantitative cross-sectional study that included data from 331 HESFB loan beneficiaries. We used descriptive statistics to summarise students' perceptions of three aspects of the loan scheme (loan adequacy, accessibility, and timeliness) and four dimensions of academic engagement (behavioural, cognitive, emotional, and agentic engagement) based on their responses. The study findings showed, among others, that the students rated loan adequacy ($M = 2.01$) and timely loan disbursement ($M = 2.16$) to be relatively low, and loan accessibility ($M = 2.86$) as modest (or moderate). Nonetheless, the students reported relatively high levels of behavioural ($M = 3.18$), emotional ($M = 3.17$), cognitive ($M = 3.12$) and agentic ($M = 3.09$) engagement. The study suggests that while the HESFB beneficiaries remain highly engaged in their studies, improving the adequacy and timely disbursement of student loans could strengthen the scheme's contribution to academic capacity building with the assistance of the HESFB loan scheme for the long-term development of Uganda.

Keywords: Student financing, Higher Education Students' Financing Board, academic engagement, Higher education policy, Capacity building, STEM education, Uganda

Beyond the Contract: A Critical Review of Public Procurement Practices and The Livelihood Security of Outsourced Women Street Sweepers in Kampala

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ABSTRACT

Background: In Kampala, street sweeping is an essential sanitation service delivered through a triangular employment model where the Kampala Capital City Authority outsources operations to private service providers. While women constitute 72% of this workforce, they participate primarily as casual labour under informal contractual arrangements rather than as primary contracted Entities. Despite PPDA Act Cap 205, provisions for inclusive procurement, these women remain trapped in a cycle of outsourced poverty, earning a stagnant UGX 6,000 per day (approx. UGX 150,000/month). This study examines how the current procurement oversight fails to bridge the gap between inclusive policy and the precarious lived realities of these hidden workers.

Methods: This is doctoral literature review that employed an integrated multi-theoretical framework combining Informal Economy Theory, Social Vulnerability Theory, and the Sustainable Livelihoods Framework. It synthesized evidence from 2021–2026 KCCA budget framework papers, PPDA compliance reports, and localized socio-economic indices to analyze the structural decoupling of procurement regulatory frameworks from worker welfare outcomes.

Findings: The review identified a vulnerability trap facilitated by third-party outsourcing where private contractors prioritize cost-minimization over labour standards. Key results show that 85% of sanitation contracts lack enforceable living wage or social protection clauses for sub-contracted labour; a UGX 6.018 Billion funding gap exists to raise outsourced wages to a dignified UGX 10,000; and while PPDA's Act Section 50 (Reservation Schemes) exists to empower special interest groups, it is bypassed in favour of private firms, effectively excluding Women's SACCOs from transitioning from labourers to service providers, which would impact on their livelihoods.

Conclusion and Recommendations: The study concludes that current procurement practices at KCCA systematically reproduce structural vulnerability by treating women's labour as a residual cost. It advocates for Gender Responsive Procurement that mandates private contractors to provide NSSF and health insurance.

Furthermore, it proposes the operationalization of PPDA Act, Section 61A (Sustainable Procurement) and Section 50 to support the evolution of street-sweeping SACCOs into formal contractors, thereby fostering holistic development and direct economic empowerment.

Keywords: Public Procurement, Outsourced Labour, Women Livelihoods, Vulnerability, KCCA, Uganda.

The Effect Of Stakeholder Collaboration On Educational Inclusion Of Children In Street Situations In Uganda: Planning And Implementation Phases

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ABSTRACT

Stakeholder collaboration is emphasized in the literature as crucial in improving educational outcomes for children in vulnerable circumstances, yet children in street situations in Uganda are continually excluded from formal primary schooling. This paper aimed to examine the effect of different phases of stakeholder collaboration on the educational inclusion of children in street situations in Uganda. The specific objectives were: to assess the effect of stakeholder collaboration in planning on educational inclusion, and to assess the effect of stakeholder collaboration in implementation on the educational inclusion of street children in Uganda. A quantitative approach was adopted employing a survey design involving nine government officials, 10 NGO representatives, 220 teachers/ Head teachers, and 33 caregivers. These were sampled using proportionate random sampling, responded to a questionnaire, and the data obtained were analyzed using hierarchical multiple regression. Findings revealed that Stakeholder collaboration in planning significantly predicted educational inclusion ($B = 0.483$, $\beta = 0.470$, $p < .001$), whereas stakeholder collaboration in implementation showed an even stronger effect ($B = 0.668$, $\beta = 0.575$, $p < .001$). The total variance in educational inclusion accounted for by the planning phase was 22% and 32.4 % by the implementation phase; hence, it was concluded that stakeholder collaboration in both phases positively and significantly affects educational inclusion of street children in Uganda, with the implementation phase showing a stronger effect than the planning phase. This paper informs policy, program designers, and practitioners to plan strategically for inclusion but also consider the dynamics at the implementation phase, and strategically allocate more resources to this phase, to realize tangible education outcomes for children in street situations.

Keywords: Stakeholder Collaboration, Planning, Implementation, Children in Street Situations, Educational Inclusion.

Reimagining Education Policy For Holistic Development: Bridging Research, Innovation And Practice In Africa

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ABSTRACT

Research Topic/Problem Statement: There have been various silos in the framework in which policies on education in Africa have been conducted. In most cases, policies focused only on cognitive aspects of learning. In particular, there was a lack of integration of the social, emotional, and practical dimensions of the learning process in educational policies. The purpose of the current research is to analyze the gap between education policy aspirations of promoting holistic education and the reality of their implementation in Africa, with a special focus on Uganda's education system.

Theoretical Approach/Framework: The current research relies on the concepts and ideas of the theory of holistic development, according to which education is defined as including cognitive, social, emotional, physical, and spiritual components. The integrative policy on education takes into account that inflexible and compartmentalized curricula cannot provide the learners with knowledge and skills necessary to cope with real-life problems. Additionally, the current paper uses frameworks of policy implementation focusing on the gap between policy creation and implementation of it.

Methodology/Research Design: This study adopted a qualitative case study approach where documentary analysis was conducted for national education policies, strategic plans, and curriculum frameworks in Uganda as well as semi-structured interviews with policymakers, educators, and education researchers. This research was guided by the vision of NEMRA of demystifying research problems and bridging the gap between research and evidence-based policymaking in Africa. Data analysis involved thematic analysis, where the contradictions in policy intentions and actual policy implementations were identified.

Results/Findings: Findings from the data analysis indicated that even though the education policy documents in Uganda recognized the principles of holistic development, policy implementation approaches were still fragmented. Some of the key policy problems that emerged from this study include: lack of adequate preparation of teachers to implement holistic pedagogy, little use of technology and innovations in teaching curriculum, lack of connections between education policy and labour market demand as well as inadequate interaction between researchers and policymakers.

Relevance to Education Policy Discourse in Africa: This research was highly relevant to NEMRA's vision of making evidence-informed policymaking and practice a reality in Uganda and other regions. It aligned with the conference theme "Science, Innovation and Research for Holistic Development" by showing how policies in the field of education can be used to promote sustainable development if these policies are supported by scientific studies and innovations. The research was also relevant in the context of the existing attempts to align the educational system with the needs of society and improve research capacity in Africa.

Keywords: Education Policy, Holistic Development, Research-Policy Linkages, Curriculum Reform,

A Dialect-Aware Hybrid Corpus Curation Framework (Dhccf) For Low-Resource Languages: An English–Lusoga Case Study

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ABSTRACT:

Natural language understanding-driven machine translation models are limited by the scarcity of high-quality parallel corpora. Existing corpus development approaches have relied on extensive manual translation, standardised language varieties, or machine-assisted translation with limited expert review. Although these methods have helped create more language resources, they have struggled to balance scalability, translation quality, and the preservation of dialect diversity. The paper proposes a dialect-aware hybrid corpus curation framework (DHCCF) to develop high-quality, low-resource parallel corpora. The framework combines existing language resources, human translation, artificial intelligence-assisted translation, and expert linguistic validation.

To demonstrate the framework, advanced Lusoga language students supervised by an expert Lusoga teacher curated an English-Lusoga corpus representing the Lutenga and Lupakoyo dialect clusters. The process began by extracting English source sentences from an existing English-Luganda parallel corpus containing 41,070 sentence pairs. Of these, 15,020 sentences were translated by the students before being subjected to expert linguistic validation by the Lusoga teacher.

To increase the corpus size more quickly, a large language model generated candidate standard Lusoga translations for the remaining 26,050 English sentences. Since the standard Lusoga variety is predominantly based on the Lutenga dialect cluster, the validated translations served as the Lutenga translations in the corpus. The validated translations were then translated into the Lupakoyo dialect cluster by the Lusoga students, followed by a final round of expert linguistic validation before inclusion in the corpus. This hybrid approach to corpus curation leverages the scalability of artificial intelligence while incorporating rigorous human expertise, thereby preserving dialect-specific linguistic features.

Using the framework yields a high-quality parallel corpus that can be used not only for training but also for evaluating English-Lusoga NLU-driven MT models. Beyond the corpus itself, the proposed framework offers a practical and reusable approach to developing dialect-aware corpora for other low-resource languages

Towards high-quality text-to-speech for ugandan languages

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ABSTRACT

Uganda has more than 40 indigenous languages, but current text-to-speech (TTS) systems provide little or no support for them. This limits access to voice assistants, accessibility tools, and educational technology for a large number of speakers. This project builds and evaluates TTS systems for four Ugandan languages (Luganda, Acholi, Ateso, and Runyankole) and English, with a focus on both intelligibility and emotional expressiveness.

We created a custom speech dataset, VoTexUg/TTS-dataset, which contains multi-speaker recordings labeled for emotion in all five languages. According to our findings, no existing multilingual TTS corpora captures the emotion aspect of African languages. This dataset was used to fine-tune two models: Orpheus 3B, a large autoregressive speech-language model, and XTTS, a smaller voice-cloning-based TTS model. The models were evaluated using Word Error Rate (WER), UTMOS for perceived naturalness, and real-time factor (RTF) for inference speed. Results show a clear relationship between training data availability and output quality. Luganda achieved the lowest WER among the Ugandan languages (45.75%) and a UTMOS score of 2.74, close to the English baseline (WER 48.38%, UTMOS 2.88). Acholi, Ateso, and Runyankole showed substantially higher WER (92.99% to 113.67%) and lower UTMOS scores.

A notable difference was observed between the two architectures. Orpheus 3B produced more accurate and controllable emotional expression across languages, while XTTS produced speech that was rated as more natural-sounding, independent of emotional accuracy. This suggests that, at the present model scale and with the available training data, emotional control and perceived naturalness are not necessarily achieved together, and the choice of architecture may depend on which of these two qualities is prioritized for a given application. This work provides, to our knowledge, the first comparative TTS benchmark across these four Ugandan languages and English, along with baseline numbers that future work on Ugandan and East African language TTS can be measured against.

Keywords: Text-to-Speech, Low-Resource Languages, Multilingual, Africa

THEME 9:

VALUE ADDITION, PROCESSING AND MARKET ACCESS

Assessing the Influence of Rural Infrastructure on Market Access for Small-Scale Green Gram Farmers in Tharaka North Sub County, Kenya

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ABSTRACT

Green gram (*Vigna radiata*) is a vital drought-tolerant crop enhancing food security and income for small-scale farmers in Kenya's Arid and Semi-Arid Lands (ASALs). However, farmers face persistent barriers to accessing profitable markets, limiting their ability to add value and capture higher returns. While rural infrastructure—including roads, storage facilities, and transport services—is recognized for reducing transaction costs and improving market integration, limited empirical evidence exists on its specific influence in Kenyan ASAL contexts. This study examined the effect of rural infrastructure on market access among 387 randomly selected green gram farmers in Tharaka North Sub County using a cross-sectional survey. A composite Market Access Index (MAI) was constructed based on frequency of sales, distance to market, and price realization, and categorized into low, moderate, and high levels. A multinomial logistic regression model estimated the effects of road type, road passability, transport availability, storage access, and distance to market, land size, household size, and mobile phone ownership. Results show that distance to market is the strongest determinant, reducing the likelihood of moderate access by 8.5% (RRR = 0.915, $p < .001$) and high access by 16.6% (RRR = 0.834, $p < .001$) per additional kilometer. Storage access within 5km significantly increased moderate market access (RRR = 1.709, $p = .024$), enabling farmers to store produce and avoid distress selling. Better road quality enhanced high market access (RRR = 1.620, $p = .022$), while mobile phone ownership more than doubled the likelihood of high market access (RRR = 2.078, $p = .013$), facilitating price information and buyer coordination. The study concludes that market access is primarily shaped by spatial and infrastructural constraints. Policy efforts should prioritize improving feeder road networks, expanding decentralized storage facilities, and promoting digital connectivity to enhance smallholder market integration and value capture in semi-arid regions.

Keywords: Green gram, market access, rural infrastructure, value addition, storage, multinomial logistic regression

THEME 10:

HEALTH, BIOTECHNOLOGY AND LIFE SCIENCES

Prevalence of HIV and Syphilis Co-Infections among Dementia Patients Attending Selected Hospitals in Kampala, Uganda

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ABSTRACT

Background and Aim: Infectious diseases such as Human Immunodeficiency Virus (HIV) and Syphilis are recognized contributors to neurological complications and cognitive impairment. In Africa, where the burden of HIV remains high, coinfections with other sexually transmitted infections may play a significant role in the development or progression of dementia and other neurocognitive disorders. Dementia presents as a deterioration from an earlier achieved level of cognition that impacts activities of daily livings or social functioning characterizes a set of illnesses and ultimately their capacity to carry out routine chores. Dementia patients in Uganda were the focus of this investigation, which aimed to establish HIV and Syphilis seropositivity prevalence in blood specimens.

Method: Descriptive cross-sectional research method was used. A total of 156 volunteers, all 50 years and older were recruited from selected referral hospitals in Kampala. 78 participants were identified as having dementia by medical personnel, and the other 78 participants served as controls free of the disease. The Blessed Dementia Scale (BDS), the Mini-Mental State Examination (MMSE), researcher-administered questionnaires and laboratory forms were used to gather data. Ten mls of Blood specimens were collected from antecubital vein into Dipotassium EDTA for the HIV and Syphilis microbial biomarkers using standard laboratory protocols. HIV and Syphilis were tested using Determine, Stat Pak and TPHA kits. Data analysis was performed using SPSS and R Studio. The correlations between dementia and the blood

biomarkers were investigated using logistic regression, descriptive statistics, chi-square tests, and Fisher's exact test. Statistical significance was defined as a p-value below 0.05.

Result: HIV was present in 27/78 (34.6) % of dementia patients, whereas Syphilis was present in 27/78(30.4%) Everyone who took part, or who was responsible for their care, gave their informed permission. Confidentiality and ethical research practices were maintained throughout the study. The study concluded that prevalence of HIV and Syphilis among dementia patients are high and microbial biomarkers are relevant in the early diagnosis and risk assessment of dementia. Their integration into clinical practice could improve early detection and patient outcomes in Uganda.

Keywords: Alzheimer's Disease, Dementia, HIV, Syphilis

Transforming Global Health Systems Through Innovation, Sustainability, and Emerging Technologies

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ABSTRACT

Health, biotechnology, and life sciences have become central pillars of global socioeconomic development, playing a critical role in improving human health, enhancing agricultural productivity, strengthening environmental sustainability, and driving industrial innovation. Over the past decades, rapid advancements in genomics, molecular biology, artificial intelligence, precision medicine, bioinformatics, synthetic biology, regenerative medicine, vaccine development, and digital health have fundamentally transformed the prevention, diagnosis, treatment, and management of diseases. These innovations have not only improved clinical outcomes but have also expanded the possibilities for sustainable development by enabling more efficient use of biological systems and data-driven decision-making in healthcare and related sectors. The COVID-19 pandemic further underscored the indispensable contribution of biotechnology and life sciences in global health security, as evidenced by the unprecedented speed of vaccine development, strengthened genomic surveillance systems, improved diagnostic technologies, and accelerated therapeutic innovations that collectively helped mitigate the impact of the crisis.

Despite these remarkable advancements, significant disparities continue to exist between developed and developing countries in terms of access to biotechnology infrastructure, research funding, skilled human resources, regulatory capacity, and equitable distribution of life-saving innovations. These inequalities have constrained the ability of many low- and middle-income countries to fully benefit from scientific progress, thereby perpetuating global health inequities. Limited investment in research and development, weak institutional frameworks, and inadequate technological capacity further exacerbate these challenges, particularly in Sub-Saharan Africa and other resource-constrained regions.

This paper provides a comprehensive examination of the interrelationship between health, biotechnology, and life sciences, emphasizing their combined contribution to strengthening healthcare delivery systems, enhancing disease prevention strategies, improving environmental conservation, ensuring food security, and promoting inclusive economic development. It synthesizes contemporary scholarly literature on emerging technologies such as genomics, gene editing, artificial intelligence, digital health platforms, precision medicine, nanotechnology, bioinformatics, vaccine innovation, and regenerative medicine,

highlighting their transformative potential across multiple sectors.

In addition, the paper critically explores the ethical, legal, regulatory, socioeconomic, and environmental dimensions associated with the application of biotechnology and life sciences. It recognizes that while these technologies offer immense benefits, they also raise important concerns related to data privacy, biosecurity, equity in access, genetic modification, and responsible innovation. Special attention is given to the African context, where biotechnology presents both significant opportunities and persistent challenges. In particular, the continent stands to benefit from advancements that strengthen health systems, combat infectious and non-communicable diseases, enhance agricultural resilience, and accelerate progress toward the Sustainable Development Goals (SDGs). The paper concludes by proposing strategic policy recommendations aimed at promoting responsible innovation, strengthening research capacity and infrastructure, fostering international and regional collaboration, improving regulatory governance frameworks, and ensuring equitable access to biotechnology and life science innovations. These measures are essential for harnessing the full potential of biotechnology to achieve sustainable global health and development.

Keywords: Health systems, Biotechnology, Life sciences, Precision medicine, Artificial intelligence, Genomics, Bioinformatics, Digital health, Sustainable development, Africa.

Understanding Stakeholder Engagement For Improved Sustainability Performance of Health and Sanitation Projects in Uganda: A Qualitative Inquiry

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ABSTRACT

Purpose: This study examines how stakeholder engagement influences the sustainability performance of health and sanitation projects in Uganda. It aims to uncover how engagement practices ranging from consultation to co-creation, shape economic, social, and environmental outcomes in a low-resource context.

Methodology: A qualitative research design was adopted, using in-depth interviews, field observations, and document analysis with 21 participants. Participants were purposively selected for their strategic involvement in health and sanitation projects, and data collection continued until thematic saturation was achieved. Thematic analysis was applied, guided by Stakeholder Theory and Elkington's Triple Bottom Line framework.

Findings: Five key themes emerged including community concerns, communication, governance approaches, project oversight, and ownership perceptions. Inclusive participation and transparent communication enhanced trust and community ownership; governance and oversight mechanisms strengthened accountability and resource efficiency; while capacity building and cost-sharing supported long-term project viability. These findings demonstrate that meaningful stakeholder engagement reinforces sustainability performance across economic, social, and environmental dimensions.

Practical Implications: The study provides actionable insights for policymakers and practitioners by emphasizing the need to institutionalize inclusive participation, strengthen accountability frameworks, and promote shared ownership through co-financing and capacity development. Such measures can transform stakeholder engagement from a procedural formality into a strategic enabler of sustainable development.

Originality/Value: To the authors' knowledge, this study advances the understanding of stakeholder engagement and sustainability performance within Uganda's health and sanitation sector. The study contributes to theory by extending the application of Stakeholder Theory and Elkington's Triple Bottom Line to a developing-country context, demonstrating how relational and procedural engagement mechanisms translate into tangible sustainability outcomes.

Keywords: Stakeholder engagement; Sustainability performance; Health and sanitation projects; Triple Bottom Line; Uganda

High Prevalence of Intestinal Esbl-Producing Enterobacterales in Neonates at Jinja Referral Hospital, Uganda

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ABSTRACT:

Background and Aim

Neonates face an increased risk of colonization by multidrug-resistant (MDR) pathogens, such as Extended Spectrum Beta-Lactamase (ESBL)-producing Enterobacterales (EPE), and are therefore vulnerable to difficult-to-treat neonatal sepsis. This study aimed to determine the point-prevalence of fecal EPE carriage in neonates at Jinja Referral Regional Hospital (JRRH) in Uganda.

Methods:

Fecal samples were collected from 47 neonates admitted at JRRH neonatal unit in April 2023. The primary outcome was the proportion of neonates colonized by EPE. We also characterized EPE strains and quantified neonatal antibiotic exposure. Patient data covered clinical characteristics, maternal infection, antibiotic exposure, and early nutrition. EPE strains were isolated on CHROMagar™ ESBL media, and species identification was performed using MALDI-ToF. All *E. coli* and *Klebsiella* species were sequenced on NovaSeq 600 (Illumina) using the Nextera XT (Illumina) library preparation kit. Raw reads were assembled using SPAdes ver 3.15, and the assembled draft genomes were used to query databases to determine sequence types, resistance genes, virulence genes, and plasmid replicon types.

Results:

EPE colonization was observed in 46.8% (22/47) of neonates at a median swabbing age of 4 days, with 98% receiving antibiotic treatment. Maternal antibiotic exposure during pregnancy was 45%. The 22 EPE-strains were distributed across the following bacteria: *E. coli* (EC)(n=14), and *K. pneumoniae* (n=2), *K. quasipneumoniae* (n=3), and *K. variicola* (n=1), *Enterobacter hormaechei* (n=2). Most EC isolates and all *Klebsiella* species carried the blaCTX-M-15 ESBL gene and multiple resistance genes, but did not carry carbapenemases. Three EC isolates belonged to international clones (ST410, ST131, and ST1193). Additionally, most isolates carried various plasmid replicon types, with IncF variants being the most prevalent.

Conclusions:

EPE colonized a high proportion of neonates at JRRH. This study underscores ABR challenges in neonatal care in this setting, providing a baseline for developing sustainable infection control strategies.

Population Genetics Insights to Inform Tsetse Fly Control in Kenya

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Tsetse flies (*Glossina* spp.) are the sole vectors of African trypanosomes, the causative agents of Human African Trypanosomiasis (HAT) and Animal African Trypanosomiasis (AAT). Approximately 60–70 million people and 50–60 million cattle remain at risk, with AAT exerting particularly severe impacts on livestock productivity through reduced milk yield, draught power, and herd viability, thereby undermining household income, food security, and agricultural sustainability. Environmental factors—including land use change, climate variability, and habitat fragmentation—further shape tsetse distribution, population dynamics, and vector competence, reinforcing the need for ecologically informed control strategies. Within a One Health framework, these diseases exemplify the interconnectedness of human health, animal health, and the environment across sub-Saharan Africa. In Kenya, *Glossina pallidipes* is the most widespread and epidemiologically important species. Understanding its population structure is critical for elucidating connectivity, dispersal, and resilience in the context of both ecological and anthropogenic pressures.

Using microsatellite and mitochondrial-based population genetic analyses over the past 10 years, our work has revealed spatial structuring of *G. pallidipes* populations across Kenya. Earlier studies identified two major genetic clusters (eastern and western populations), largely separated by the Great Rift Valley, which acts as a barrier to gene flow. Subsequent analyses refined this structure into three clusters—eastern, south-western, and north-western populations—with evidence of reduced genetic diversity and increased fragmentation in western Kenya, likely driven by anthropogenic pressures. More recent findings further highlight potential isolation in northern populations (e.g., Turkana), suggesting localized evolutionary trajectories and limited connectivity.

These population genetic insights have direct implications for vector control. The relatively connected and genetically resilient eastern populations require integrated, area-wide, and sustained interventions to prevent reinvasion. In contrast, the fragmented western populations present opportunities for targeted, localized control strategies with a higher likelihood of success due to reduced gene flow. Potentially isolated northern populations may be amenable to elimination approaches, provided reinvasion risks remain minimal. Overall, this work demonstrates how population genetics can inform spatially explicit, cost-effective tsetse control strategies within a One Health framework, linking vector ecology to human health, animal health, and ecosystem dynamics.

Environmental Performance of Bioplastic Films from Cassava Peel Waste: Water Absorption, Biodegradability, and Phototoxicity on Mung Beans (*Vigna Radiata*)

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ABSTRACT

Plastic pollution has intensified the search for sustainable alternatives, with bioplastics offering promising solutions. This study investigated the influence of chitosan and cellulose in cassava starch-based bioplastic films generated from cassava peels, focusing on water absorption, biodegradability, and phytotoxicity. The research design was experimental, American Standard Testing Methods (ASTM) were used, and data were analysed with GraphPad Prism software. Results showed that chitosan-enhanced bioplastics had the lowest water absorption (41.9%), while cellulose-enhanced films absorbed the most (97.8%). A combination of cellulose and chitosan produced moderate absorption rates (40.8–60%). All bioplastic films achieved complete biodegradation within 20 days, with compost soil accelerating the process compared to natural soil. Cellulose-enhanced films degraded fastest, reaching 100%, while chitosan-enhanced films degraded more slowly (39.7% in compost, 48.8% in natural soil). Importantly, none of the films exhibited phytotoxic effects. In fact, chitosan-enhanced bioplastics stimulated seedling growth, yielding the highest biomass (fresh weight 0.81g, dry weight 0.11g). The findings highlight chitosan's role in improving water resistance in bioplastics, making it suitable for outdoor applications such as packaging. Compost soil provides an effective pathway for bioplastic waste management, converting it into agricultural manure. Moreover, the growth-promoting effect of chitosan-enhanced bioplastics suggests potential use as a fertilizer.

Keywords: Cassava starch, Peels, Bioplastics, Phototoxicity, Mung beans

Barriers, Facilitators, and Early Implementation of the Mhgap-Ig for Dementia Care in Rural Uganda: A Case Study of Kabale District, Southwestern Uganda

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ABSTRACT

Background: Dementia is a growing public health concern in low- and middle-income countries, yet its recognition and management remain limited in primary healthcare settings. The World Health Organization's mental health Gap Action Programme Intervention Guide (mhGAP-IG 2.0) provides evidence-based guidance for non-specialist providers; however, its utilization in routine care is often constrained by behavioral, organizational, and contextual barriers. This study identified behavioral and contextual barriers and facilitators to mhGAP-IG 2.0 utilization for dementia care, co-designed and pilot-tested a theory-informed coalition-building implementation strategy, adapted mhGAP-IG tools, and evaluated implementation processes and perceived outcomes.

Methods: A qualitative, theory-informed co-design and pilot implementation study with an embedded process evaluation was conducted in two rural primary healthcare facilities in Uganda. An initial qualitative inquiry explored barriers and facilitators to mhGAP-IG use among non-specialist providers. Findings were mapped onto the COM-B model to identify behavioral determinants. Using these findings, a coalition-building implementation strategy was co-designed with stakeholders, alongside adapted mhGAP-IG tools. The intervention was implemented over six months with non-specialist healthcare providers. Process evaluation data were collected through monitoring visits, coalition reflections, field notes, and fidelity checklists, and analyzed using

reflexive thematic analysis.

Results: Barriers included limited knowledge and skills, high workload and competing priorities, and low confidence in dementia diagnosis. Facilitators included prior exposure to mental health care and perceived relevance of dementia services. The co-design process resulted in a contextually tailored coalition-building strategy and simplified, user-friendly mhGAP-IG tools. Coalition-building improved mhGAP-IG utilization. Providers reported increased confidence and visibility of dementia care in practice. The intervention was perceived as feasible, acceptable, and appropriate, though influenced by contextual constraints, including workload and diagnostic uncertainty.

Conclusion: This study demonstrates that a theory-informed, coalition-building implementation strategy can address key behavioral and contextual barriers to mhGAP-IG utilization.

Keywords: Dementia; mhGAP-IG; implementation science; coalition-building; primary healthcare; Uganda; COM-B; process evaluation

Lifestyle And Quarry Site Determinants Of Musculoskeletal Injuries among Formal and Informal Stone Quarry Workers in Busoga Region: A Comparative Cross-Sectional Study

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ABSTRACT

Introduction: Musculoskeletal Injuries (MSIs) are a major occupational health concern in the quarrying industry, particularly in low- and middle-income countries where both formal and informal quarry operations coexist. Stone quarry workers are exposed to repetitive manual tasks, heavy lifting, awkward postures, inadequate protective equipment, and suboptimal working environments, all of which increase the risk of musculoskeletal injuries. However, little is known about the prevalence and related factors to MSIs in stone quarry site. This study assessed lifestyle and quarry site determinants of musculoskeletal injuries among formal and informal stone quarry workers in the Busoga region, Uganda.

Methods: A cross-sectional study design employing quantitative methods was conducted among 427 stone quarry workers in the Busoga region. Participants were recruited using a cluster sampling technique. Data on sociodemographic characteristics, quarry site conditions, safety practices, and musculoskeletal Injuries were collected using a structured questionnaire. Data were analyzed using STATA version 16. Modified Poisson regression models were used to estimate adjusted prevalence ratios (aPRs) and identify factors associated with musculoskeletal injuries separately for formal and informal quarry sites.

Results: The study had a response rate of 96.6%. The prevalence of musculoskeletal injuries was substantially higher among workers in informal quarry sites (60.8%) compared to those in formal sites (25.4%). In informal quarries, education level was significantly associated with musculoskeletal injuries, with workers who had attained primary (aPR: 0.58; 95% CI: 0.50–0.68), secondary (aPR: 0.55; 95% CI: 0.44–0.69), or tertiary education (aPR:

0.62; 95% CI: 0.47–0.80) showing a lower prevalence of injuries compared to those with no formal education. Access to personal protective equipment was also protective, where accessing some or all required PPE was associated with a reduced prevalence of musculoskeletal injuries (Some access: aPR 0.49, 95% CI 0.37–0.65, $p < 0.001$; full access: aPR 0.59, 95% CI 0.505–0.689, $p < 0.001$). In formal quarry sites, poor lighting conditions were strongly associated with increased musculoskeletal injury prevalence (aPR: 3.50; 95% CI: 1.39–8.79).

Conclusion: This study demonstrates a high burden of musculoskeletal injuries among stone quarry workers, with distinct risk patterns between informal and formal quarry settings. Interventions should prioritize improving educational and ergonomic awareness, ensuring consistent access to appropriate PPE, and strengthening engineering controls such as adequate lighting to reduce preventable musculoskeletal injuries in quarrying environments.

Keywords: Musculoskeletal injuries, lifestyle and site-related factors, stone quarry, UGANDA

Building a Center of Excellence in One Health at Mbarara University of Science and Technology (Must): A Situational Analysis

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ABSTRACT

Introduction: This work focuses on documenting the growth trajectory of the One Health approach at MUST, furthering her niche of promoting relevant Higher Education, Research, Innovation and Sustainable Community Engagement. The considered opinion is that, a One Health Champion, Myself, by presenting this work, I take the responsibility to account for the efforts across time that continue to leverage the positioning of Science and Innovation in the promotion of well-being, quality of life and a sustainable earth.

Methodology: A scoping literature review is employed, by exploring policy, process, implementation and evaluation documents on One Health in the Context of Uganda. There is a deliberate focus upon the role that MUST was engaged in. The review attempts to shed more light on the next steps of the development of One Health at MUST.

Findings: In line with the Global Health Security Agenda (GHS) and the Global Sustainable Development Goals (SDGs), and the current era of emerging, re-emerging health problems and diseases, the African Mbarara University of Science and Technology has positioned herself to continue preparing a fit for purpose next generation work force, anchored in One Health in order to create mechanisms to sustainably mitigate the escalating Global Health Security burden, possibly most apparent within Africa. The most notorious issues are climate change, Antimicrobial Resistance and the resultant changing human - animal and environment ecosystem that has led to regular episodes of pandemics and epidemics.

Conclusion: This work sheds light upon how to build from scratch in one Health Programing and draws the attention of the audience to the role of institutional development in support fit for purpose strategies.

Keywords: One Heath, Ecosystem, Uganda, Analysis

Community Perspectives, Experiences, and Factors Shaping Perceptions of the Informed Consent Process in Public Health Research in Bushenyi District, Southwestern Uganda

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ABSTRACT:

Background: The informed consent process is a cornerstone of ethical research, yet its implementation in community-based public health research, particularly in diverse cultural contexts like Uganda, remains challenging. There is limited evidence on how communities themselves perceive and experience this process, which is crucial for building trust and ensuring truly voluntary participation. This study explored the perspectives, lived experiences, and factors influencing community perceptions of the informed consent process in public health research in Bushenyi District, Southwestern Uganda.

Methods: A convergent parallel mixed-methods design was employed. A total of 89 participants from selected villages in Bushenyi District were recruited. Data collection involved focus group discussions (FGDs), in-depth interviews (IDIs) with key informants (community leaders, religious leaders, VHTs), and a structured questionnaire. Fifteen key informants were engaged, of whom 10 participated in FGDs and 5 were interviewed independently. Quantitative data were analyzed using STATA version 17, employing descriptive and inferential statistics. Qualitative data were analyzed thematically using NVivo version 14.

Results: Key themes emerged, revealing a strong community desire for transparency, clarity, and voluntary participation. However, these principles are significantly shaped by cultural norms of communal decision-making (especially for women), economic needs, and previous experiences with research. Trust in local leaders and Village Health Teams (VHTs) was identified as a critical factor. Quantitative analysis showed that prior research experience, higher education levels, and older age were associated with more positive perceptions of the consent process. The study also highlighted significant barriers, including language differences, fear of government surveillance, and the absence of post-study feedback.

Conclusion: Community perspectives on informed consent are not monolithic but are dynamically shaped by cultural, economic, and experiential factors. A one-size-fits-all consent model is insufficient. Effective consent requires a hybrid approach that respects individual autonomy while engaging with community structures. This includes using clear, local language, involving trusted intermediaries, managing expectations regarding compensation and benefits, and establishing formal feedback mechanisms. These findings offer actionable insights for researchers and ethics committees to design more culturally sensitive and ethically robust public health research.

Keywords: Informed Consent, Public Health Research, Community Perspectives, Research Ethics, Uganda, Cultural Sensitivity

Utilisation of Modern Family Planning Methods and Associated Factors among Women of Reproductive Age in Masaka, Central Uganda

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Background: Modern family planning is a cost-effective public health intervention that prevents unintended pregnancies, reduces unsafe abortions, and improves maternal and reproductive health outcomes. Despite increased availability of family planning services in Uganda, utilisation remains suboptimal. This study assessed the prevalence of modern family planning utilisation and associated factors among women of reproductive age in Masaka, Central Uganda.

Methods: A facility-based analytical cross-sectional study was conducted among 398 women aged 15–49 years attending the outpatient department of Masaka Regional Referral Hospital. Participants were recruited through consecutive sampling. Data were collected using structured interviewer-administered questionnaires and analysed using Stata version 14. Descriptive statistics, bivariable, and multivariable Poisson regression analyses were used to determine factors associated with modern family planning utilisation.

Results: The prevalence of modern family planning utilisation was 55.5% (221/398). Injectable contraceptives were the most commonly used method (41.2%), followed by implants (24.0%), oral contraceptive pills (15.4%), intrauterine devices (10.0%), condoms (7.7%), and permanent methods (1.8%). Multivariable analysis revealed that utilisation was significantly higher among married women (aOR=1.09, 95% CI: 1.02–1.15, $p=0.008$), women with two or more children (aOR=1.10, 95% CI: 1.04–1.17, $p=0.001$), and those with higher income levels (aOR=1.09, 95% CI: 1.02–1.17, $p=0.013$). Knowledge of family planning was the strongest predictor of utilisation (aOR=1.30, 95% CI: 1.18–1.41, $p<0.001$), while partner support significantly increased uptake (aOR=1.17, 95% CI: 1.10–1.25, $p<0.001$). Greater distance from a health facility reduced utilisation (aOR=0.87, 95% CI: 0.81–0.93, $p<0.001$).

Conclusion: Modern family planning utilisation in Masaka was moderate and exceeded the national average. Strengthening family planning education, promoting male involvement, and improving access to reproductive health services may further enhance uptake and improve maternal and reproductive health outcomes.

“I Am No Longer the Same”; Mental Well-Being, Intimate, and Social Experiences of Women Living with Obstetric Fistula in Uganda

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ABSTRACT

Obstetric fistula profoundly disrupts women’s mental wellbeing, intimate, and social lives. This study explores the lived experiences of Ugandan women attending a specialized fistula repair camp at Kitovu Mission Hospital. Through seventeen in-depth interviews, we examined how women navigate distress and eventually may adapt with resilience. Participants described intense shame, stigma, and cognitive strain, often leading to self-isolation and emotional estrangement. Marital and sexual relationships were affected, with many women struggling to disclose their condition to partners. Spousal support and family involvement helped mitigate isolation and foster mental well-being. Surgical repair marked a turning point by restoring bodily function, yet recovery extended far beyond physical healing. Women’s reproductive futures were shaped by fear of recurrence and the desire for children, often complicated by ongoing relational and sexual disruptions. We argue that psychosocial support, including pregnancy spacing, and couple-based counselling is essential to promote whole-person healing, to empower women navigate the complex social, emotional, and reproductive consequences of fistula.

Patient Flow and Quality of Care among Elderly Patients Attending Outpatient Clinics in Kabale and Kitagata Hospitals, Southwestern Uganda

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ABSTRACT

Background: Population ageing is increasing the demand for geriatric healthcare services in Uganda, yet outpatient clinics continue to experience inefficient patient flow, prolonged waiting times, and fragmented service delivery, which compromise the quality of care for older adults. This study evaluated the effect of patient flow on the quality of care among elderly patients attending outpatient clinics in Kabale Regional Referral Hospital and Kitagata General Hospital.

Methods: A mixed-methods quasi-experimental study employing a non-randomized pretest-posttest design with comparison groups was conducted among 216 elderly patients aged 60 years and above and 19 key informants. Quantitative data were collected using structured questionnaires and analyzed using descriptive statistics, regression analysis, and difference-in-differences techniques. Qualitative interviews were analyzed thematically to complement quantitative findings. A patient flow improvement model was developed, implemented, and evaluated.

Results: Baseline findings revealed substantial inefficiencies in patient movement, particularly at diagnostic and pharmacy service points, resulting in long waiting times and poor patient experiences. Overall, 86.2% of elderly patients expressed dissatisfaction with outpatient services. Following implementation of the patient flow intervention, significant improvements were observed in service efficiency, patient satisfaction, and overall quality of care. Difference-in-differences analysis confirmed a significant intervention effect, while staffing levels significantly moderated the relationship between patient flow and quality of care, with better-staffed facilities demonstrating greater improvements.

Conclusion: Optimizing outpatient patient flow through coordinated service pathways and adequate staffing can substantially improve the quality of geriatric outpatient care. Integrating elderly-friendly service pathways, digital appointment and patient navigation systems, and strengthening human resources could enhance healthcare efficiency and patient outcomes in resource-limited settings.

Keywords: Patient flow, quality of care, elderly patients, outpatient clinics, geriatric care, quasi-experimental study, Uganda.

Risk Factors of Multi-Drug-Resistant Tuberculosis (Mdr-Tb) among Adult Patients with Pulmonary Tuberculosis at Jinja Regional Referral Hospital and Iganga Hospital in Busoga Region, Eastern Central Uganda – An Unmatched Case-Control Study

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ABSTRACT

Introduction: Multidrug-resistant Tuberculosis (MDR-TB), a type of TB which is resistant to at least Rifampicin and Isoniazid, is a growing public health threat in Uganda. Yet, region-specific data on risk factors are limited, particularly in the Busoga region. This study aimed to identify behavioural, clinical, and health system-related factors associated with MDR-TB among adult pulmonary TB patients attending Jinja Regional Referral Hospital and Iganga General Hospital in Busoga region, East Central Uganda.

Methods: An unmatched casecontrol study was conducted using retrospective data from January 2020 to December 2024. 51 laboratoryconfirmed MDRTB cases and 102 drugsusceptible TB controls were selected. Data were extracted from TB registers and the Electronic CaseBased Surveillance System (ECBSS), covering sociodemographic, behavioural, clinical, and health system characteristics. Univariable and multivariable logistic regression with backward elimination were performed; significance was set at $p < 0.05$. Model fit was assessed using the HosmerLemeshow test and pseudo R^2 .

Results: Mean age was 38.6 ± 13.0 years. In univariable analysis, factors associated with MDRTB included previous TB treatment (OR 16.64), cigarette smoking (OR 3.13), poor adherence (OR 2.59), and substance use (OR 3.59). In the final multivariable model, previous TB treatment (relapse/failure) had about 20 times higher odds of MDRTB (AOR 19.94; 95% CI: 6.97–57.09; $p < 0.001$). Cigarette smoking independently increased odds nearly fivefold (AOR 4.69; 95% CI: 1.69–13.03; $p = 0.003$). Having a documented treatment supporter was protective (AOR 0.29; 95% CI: 0.10–0.85; $p = 0.024$). Age, sex, residence, alcohol use, substance use, HIV status, comorbidity, turnaround time, DOTS, and drug stockout were not independently associated ($p > 0.05$). The model showed good fit (HosmerLemeshow $\chi^2 = 1.70$, $df = 3$, $p = 0.637$) and explained 27.0% of the variance (Pseudo $R^2 = 0.270$).

Conclusion: Previous TB treatment and cigarette smoking are independent risk factors for MDRTB in the Busoga region, while the presence of a treatment supporter is protective. Rapid drug susceptibility testing for retreatment patients, integration of smoking cessation into TB care, and strengthening of treatment supporter programs should be prioritized to reduce the burden of MDRTB.

POSTER PRESENTATIONS

Influence Of Terrestrial And Wetland Ecosystems On Species Occurrence Of *Aedes* And *Culex* Mosquitoes As Vectors Of Arboviruses In Northern Uganda

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Policy Processes And Implementation: A Systems Approach To Understanding Policy Implementation Gaps In Developing Countries

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Science Laboratory Operationalization And Students' Attitude Towards Science: A Study In Secondary Schools Of Mbarara City

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Determining The Most Suitable Agricultural Crop Residues For Biomass Energy Production In Northern Uganda

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Urinary Metabolic Biomarkers Among Commercial Motorcyclists In Uganda: A Cross-Sectional Study

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Optimisation Of Fermented Finger Millet Formulation To Improve Iron Bioavailability And Reduce Anaemia Among Adolescent Mothers In Isingiro District, Western Uganda

Nuwahereza Christinah

Analysing Malaria Hot Spots Among Flood-Prone Communities In Bugoye Subcounty, Kasese District, Uganda

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Internal Control Effectiveness And Bank Risk Taking Of Listed Commercial Banks In Sub Saharan Africa

Sophia Nalunkuuma

An Integrated Erp And Mobile Application Framework For Enhancing Milk Quality Monitoring And Reducing Post Harvest Waste In Uganda's Dairy Industry.

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Determinants Of Sustainable Rural Livelihood Initiatives: An Integrated Framework Connecting Leadership, Theory And Practice

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Digital Heritage And Youth Creativity In Buganda: Reimagining Indigenous Knowledge Systems For Cultural Innovation And Social Transformation

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Evaluation Of Microplastic Deposits On Leaf Surface Of Common Roadside Edible Plants In Kakiri Town Council Wakiso District

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Beyond Infrastructure: Organizational Capabilities For Sustainable Electricity Sector Transformation In Africa Names:

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Agriculture, Food Security, And Bioeconomy: Pathways To Sustainable Transformation In Developing Economies

Robert Aonyi

A Readiness Framework For Artificial Intelligence Adoption And Digital Innovation In Private Chartered Universities In Uganda: Evidence From Muteesa I Royal University

Shaban Kyasanku*¹

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Health Workers' Perceptions On Advance Care Planning In Palliative Care At The Updf Directorate Of Hiv And Aids

Natusiima Jovinah

Beyond Income Generation: Why Not Every Money-Making Activity Is An Enterprise? Toward An Enterprise Threshold Perspective

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Collateralising Creativity: A Framework For Ip-Backed Lending And Financial Inclusion In Uganda's Creative Economy

Edwin Muhumuza

Smallholder Farmers' Participation In The Genetically Modified Crops And Organic Farming Debate In Uganda

Kiboneka Victoria

Effect Of Anthropogenic Activities On The Health Of Mayanja Wetland Area In Buyala Village-Wakiso District

Ronald Nkamusiima

Corporate Income Tax Compliance Is Central To Domestic Revenue Mobilisation In Developing

Richard Asiiimwe

Lifestyle And Quarry Site Determinants Of Musculoskeletal Injuries Among Formal And Informal Stone Quarry Workers In Busoga Region: A Comparative Cross-Sectional Study

Amina Byobona¹, Abudulmujeeb Babatunde Aremu¹, Swaibu Zziwa^{1,2}, Naziru Rashid¹, Ziadah Nankinga¹, Sumaya Nakitende¹, Muhammad Alhassan Usman Tanimu¹, Agnes Masagwai¹, Evelyn Atukunzire⁴, Henry Irumba¹, Zikula

Community-Based Tourism For Local Economic Development: A Social Business Model Perspective In Northern Uganda

Walter Komaketch

Entrepreneurship In Sub-Saharan Africa Is Creating The Biggest Employment Vehicle Through Private Sector Employment

Juliana Kayaga Sseremba

Digital Innovation Is Transforming Organizations, Economies, And Societies Worldwide.

Isaac Muhoozi

Assessing The Effect Of Anthropogenic Land Use Activities On Water Quality And Macro-Invertebrate Diversity On River Namatala, Mbale District-Uganda

Emmanuel Natiko

Building An Entrepreneurial Mindset Among Christian Youth: Evaluating The Impact Of Leadership And Innovation Training In The Church Of Uganda

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From Digital Access To Financial Capability: Women's Financial Inclusion In Uganda

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Urinary Levels Of Heavy Metal Pollutants And Oxidative Stress Biomarkers Among Commercial Motorcyclists In Uganda.

Joseph Lubyayi Bayita¹, Pavius Nkumbi¹, Moses Okol¹, Julius Mulindwa¹ & Karlmax Rutaro¹

**Application Of Random Forest Model For Milk Quality
Classification And Prototype System Development In Ugandan
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Emmanuel Behangana

**Scoping Family Medicine Within Sub-Saharan Africa, 2000-
2025: A Systematic Review Of Training, Workforce, And Service
Integration**

Kato, Sabiiti, Buwule , Mubangizi & Ndaruhutse

**Assessing The Effect Of Climate Change On Water Resources
Management In Uganda: A Policy Analysis Of Resilience Strategies
In The Face Of Environmental Uncertainty**

Kisaka Annet Magolo and Waneloba Francis Songoni

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