

# BUIRC

11th BOTHO UNIVERSITY  
INTERNATIONAL RESEARCH  
CONFERENCE 2025

## 11th BOTHO UNIVERSITY INTERNATIONAL RESEARCH CONFERENCE 2025

CONFERENCE THEME:

BUILDING SUSTAINABLE FUTURES  
THROUGH **RESEARCH,**  
**INNOVATIONS, STRATEGIES &**  
**PARTNERSHIPS**

12th – 13th June 2025

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ABSTRACTS

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## ABOUT BUIRC

# BUIRC

11th BOTHO UNIVERSITY  
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CONFERENCE 2025

## CONFERENCE THEME:

# Building Sustainable Futures Through Research, Innovations, Strategies & Partnerships

The Botho University International Research Conference (BUIRC) returns for its 2025 edition on 12th and 13th June. As a hybrid event, BUIRC 2025 will convene a dynamic mix of academics, researchers, government leaders, industry and community stakeholders to explore collaborative solutions for building sustainable futures. This year's theme underscores the urgent need to foster innovation, policy, and partnerships that drive meaningful impact across sectors. The conference will feature peer-reviewed presentations, panels, and discussions centred on sustainability, resilience, and knowledge exchange.

All accepted papers will be published and indexed by Atlantis Press, part of the Springer Nature group—ensuring global academic visibility and reach.

## A Decade of Impact and Ideas

Founded over a decade ago, BUIRC has grown into a multidisciplinary platform that facilitates dialogue across diverse academic and professional disciplines. Past editions have addressed a wide range of contemporary themes—from digital transformation to inclusive education and economic resilience—bringing together an epistemic community of researchers from across geographic and cultural boundaries. The conference continues to champion research that not only informs but transforms policy, practice, and communities, aligning with Botho University's commitment to knowledge with impact.

## Conference Speakers



**Keynote Speaker**

(Hon.) Mr Lawrence Ookeditse – Assistant Minister of Health, Botswana



**Moderator**

Anushka Bogdanov – Executive Chairperson, Risk Insights | ESG Pioneer | AI & Data Science Advocate | International Speaker



**Panel Speaker**

Timothy Siphso Matsebula – Auditor General of Eswatini



**Panel Speaker**

Sabine Moebis – Professor for Business Information Systems at the Baden-Wuerttemberg Cooperative State University (DHBW), Germany



**Panel Speaker**

Alankar Malviya – UNAIDS Botswana Country Director



**Panel Speaker**

Kaene Disepo – Youth Engagement & Mindset Shift Strategist | Advocate for Renewable Energy & Inclusive Sustainable Development | Thought Leadership Capacity Builder

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# Enhancing Financial Fraud Detection through Machine Learning: A Comparative Study of Anomaly Detection and Classification Models on Imbalanced Datasets

## **Author Profile: Mr. Ravinder Singh**

A technology evangelist and assiduous IT Leader with over 17+ years of prodigious experience in Data Architecture, Solution Architecture, Technical manager, Data Warehousing, Data Modelling, and Project Management in the Financial domain. Seeking to pursue a career in the upper echelons of an esteemed organization, that calls for extremely high levels of leadership, analytical and technical skills to steer data architecture and solution architecture projects by utilizing the advancement in technology and gain further experience to contribute to the success of the organization.

### **Keywords:**

AML/Fraud Fin Crime Solution Architect/SME | OFSAA FCCM | OFSAA ERM Basel II | OFSAA Data Modeling | Data Science

### **Abstract:**

Financial fraud poses an escalating global threat, fuelled by the proliferation of electronic payment systems. As traditional methods of monitoring and detection struggle to keep up with the vast number of daily transactions, the need for automated fraud detection systems has become paramount. This paper explores the application of machine learning techniques to detect fraudulent financial transactions in imbalanced datasets. I evaluate two datasets: one synthetic and one anonymized real-world dataset of European credit card transactions. A variety of machine learning models, including Isolation Forest, Decision Trees, Logistic Regression, Random Forest, and XG Boost, were trained to classify fraudulent transactions. Techniques such as ADASYN were used to balance the datasets and improve model performance. Initial results demonstrate that traditional classifiers like XG Boost and Random Forest offer superior performance in both datasets, achieving high accuracy, precision, and recall. Feature engineering and dimensionality reduction were further employed to optimize computational efficiency without significant loss in performance. This study highlights the effectiveness of ensemble learning and anomaly detection in financial fraud detection and underscores the importance of data preprocessing and feature selection in improving model accuracy on imbalanced datasets.





# Cloud Radio Access Network: Architectural Foundations, Challenges, and Future Directions

## **Author Profile: Mr. Digotetso Matema**

Digotetso Matema is a telecom leader with progressive responsibility across transport, IP core and data networks at Mascom Wireless. Rising from Network Engineer to Transport Network Manager—and currently acting as Data Network Manager—he has planned and delivered nationwide backbone upgrades, including DWDM, SDH, microwave and FTTH rollouts, while coordinating Mascom's IP-core modernisation and national DNS deployment. Mr Matema pairs technical depth with business vision: he holds an MBA, is completing an MSc in Computer Science, and is credentialled as a CCNP, PRINCE2 Practitioner and Agile professional

**Author Profile\*: Bakang Motshegwe Author Profile\*: Shree Om**

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### **Keywords:**

Robotics, automation, research, development, productivity

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### **Abstract:**

Cloud Radio Access Network (C-RAN) represents a paradigm shift in wireless network design, moving away from conventional distributed base station architectures toward centralized, cloud-based processing. This paper provides a comprehensive examination of the architectural fundamentals of C-RAN, including the centralized Baseband Unit pool, Remote Radio Heads, and the high-speed fronthaul and backhaul links that interconnect them. It explores how virtualization techniques—particularly Network Function Virtualization and Software-Defined Networking — enable efficient aggregation and dynamic allocation of computational and radio resources. The analysis also highlights the evolution from traditional RAN, where baseband processing is co-located with radio functionality, to a centralized model that enhances scalability, reduces capital and operational expenditures, and improves cooperative signal processing. In addition to the architectural advantages, the paper outlines challenges related to fronthaul latency, bandwidth limitations, timing synchronization, and integration of heterogeneous network components. Keywords: Cloud RAN, baseband virtualization, Remote Radio Head, Fronthaul, Network Function Virtualization, Software-Defined Networking, 5G.

*\*Profile Unavailable*





# The role of English communication skills in academic success: A systematic review of university students' performance

## **Author Profile: Ms.Nthati Augustina Mosebi**

A results-driven education professional and dynamic academic leader with over 15 years of impactful experience in higher education, curriculum development, community engagement, and project management. Holds a Master of Arts in English Language and Linguistics from the National University of Lesotho (2021), a Bachelor of Honours in Professional Education Management and Leadership from the University of the Free State (2015), and a Bachelor of Education in English Language and Literature in English from the National University of Lesotho (2007). Passionate about youth empowerment, health education, and educational reform in Lesotho. Recognized for blending academic excellence with community transformation, delivering strategic solutions in academic environments, and mentoring future leaders across institutions.

### **Keywords:**

Education & Communication Expert | Curriculum Design | Project Coordination | Youth Empowerment | English Linguistics | Strategic Education Leadership

### **Abstract:**

English communication skills significantly impact the academic success of university students. As globalization continues to expand, proficiency in speaking, listening, writing, and reading English has become essential for navigating higher education. This study aims to systematically review the influence of English communication skills on academic performance by analyzing relevant literature from 2019 to 2025. A qualitative approach was employed utilizing a systematic review design within the interpretivist paradigm. Thematic analysis was conducted on selected peer-reviewed journal articles, conference papers, and empirical studies to identify key themes. Inclusion criteria focused on recent studies that explore the relationship between communication proficiency and academic achievement.

The findings indicated that students with strong communication skills perform better in coursework, examinations, and interactive learning activities. Listening skills enhance comprehension, while speaking proficiency fosters active participation in discussions. Proficiency in academic writing improves the ability to construct coherent arguments, and reading skills contribute to the effective synthesis of complex information. Barriers such as language anxiety, limited vocabulary, and insufficient early exposure hinder communication development, negatively impacting students' academic success. Institutions that implement structured language training, interactive learning activities, and blended teaching approaches can assist students in overcoming these challenges. The study concludes that English communication proficiency is a critical determinant of university students' academic performance. Universities should integrate language support programs, speech training, and writing workshops into their curricula to enhance students' competencies. Recommendations include increasing opportunities for real-world communication practice, adopting digital learning tools, and implementing peer-assisted learning initiatives. Addressing communication barriers through targeted interventions will enhance students' confidence, participation, and overall academic success.





# Opportunities for Authentic Learning through Challenge Driven Education at Botho University

## **Author Profile: Dr Emmanuel Zhanda**

Dr. Emmanuel Zhanda is an academic fellow in the Faculty of Business and Accounting at Botho University in Lesotho with more than 18 years of experience teaching at the tertiary level. He has a Ph.D. in Human Resources Management-Public Administration from the University of Botswana, a Master in Business Administration from Zimbabwe Open University, a Master in Higher Education from Botho University, and a Bachelor of Business Studies (Honors) Degree from the University of Zimbabwe. Emmanuel has been an avid writer and researcher for the past 10 years. He has written 2 book chapters published with IPADA.

He has developed a passion for areas of human resources management, organizational leadership, organizational behaviour, and entrepreneurship. He has presented papers at the South Africa International Conference in Educational Technology (SAICET), the South Africa International Conference in Educational (SAICE), and the Botho University International Research Conference (BUIRC). His research interests include challenge-driven education, public administration, human resources management, and entrepreneurial mentorship.

## **Author Profile: Oscar Tsie**

Oscar Tsie is an Industrial Design Lecturer at Botho University, specializing in Industrial Design and Product Development. He holds both undergraduate and postgraduate degrees, including a Master's degree, in Industrial Design and Product Design. His professional and academic background is rooted in Industrial Design and Engineering, with a focus on product development. His experience as a design engineer and senior engineer in product development before joining academia allows him to provide students with industry-relevant knowledge and skills, preparing them for real-world engineering challenges. This hands-on approach helps students develop innovative thinking and practical skills essential for engineering and product design careers.

He is an instructor involved in Challenge Driven Education (CDE), a project-based learning pedagogy that engages students in addressing real-world societal challenges aligned with the United Nations Sustainable Development Goals (SDGs). This pedagogy emphasizes design thinking, multidisciplinary teamwork, and collaboration with external stakeholders to develop innovative, sustainable solutions. The CDE approach fosters active, experiential, and transdisciplinary learning, enabling students to develop key competencies for sustainability and transformative change.

Examples of Challenge Driven Education projects he has guided students to undertake are Biogas Packaging for Water Utilities Corporation: A project aimed at developing sustainable energy solutions through biogas packaging. As well as the Solar Water Automated Dispenser: A solar-powered system designed to provide automated water dispensing, addressing water access issues.

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### **Keywords:**

Challenge-Driven Education, Sustainable Development Goals, Decolonizing Knowledge, authentic assessment, curriculum integration, stakeholder collaboration.

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## PAPER TITLE

# Opportunities for Authentic Learning through Challenge Driven Education at Botho University

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**Abstract:**

There are a plethora of global challenges bedeviling mankind in the 21st century such as climate change effects, poverty, unemployment, and inequality. Education is a driver of national development, sustainability competencies, employability mindsets, a healthy planet, and sustainable livelihoods. Challenge-driven education can bridge learning and sustainability through learner-centered pedagogy relevant to acquiring sustainability competencies by solving real-life and real-time challenges. Hence, there is a need to re-contextualize knowledge by designing and implementing a curriculum that promotes authentic learning. The theoretical framework underpinning this study is the situated learning theory. This study investigates CDE opportunities that promote students' sustainability competencies and employability mindsets. The study was longitudinal from July 2022 to December 2023 and adopted ethnographic qualitative research methods and exploratory research design. The population comprised of 68 students, 7 instructors and 12 challenge givers. The study used a sample of 8 students, 2 instructors and 3 challenge givers. Interviews and document analysis were used to explore the experiences, perceptions, and insights of students, teachers, and external stakeholders who participated in a challenge-driven education. The findings from the students denote that CDE is a relevant and valuable experience that improves their skills, mindset, and knowledge concerning sustainability and employability. The findings from external stakeholders and instructors highlighted the necessity to enhance stakeholder engagement through formal Memorandum of Understanding (MoU) to sustain partnerships. This improvement is crucial for discovering opportunities, defining problems, generating and implementing solutions, communicating results, and monitoring and evaluating outcomes. These findings were instrumental in developing a framework that recommends a tripartite model of design thinking, stakeholder co-creation, and iterative reflection for integrating Challenge-Driven Education into the curriculum.





# Impact of Health Literacy on Health Risk Behaviors and Academic Performance among Graduate Learners: Case study in Private University

## **Author Profile: Dr. Aparna Kadiyala**

Dr. Aparna Kadiyala is a Fellow in Education within the Faculty of Health and Education at Botho University, with over 27 years of teaching experience across Botswana. She has served in various academic institutions including Botho University, the University of Botswana, Tonota College of Education, and several secondary schools. Her expertise spans teacher education, biological and chemical sciences, and health education, with teaching experience at diploma, degree, and master's levels.

She holds a Doctor of Philosophy in Education, a Master of Philosophy in Education, a Master of Education with a specialization in Natural Science Education, a Master of Science, a Bachelor of Science, and a Bachelor of Education. She actively supervises research projects across all academic levels and has published papers in the fields of science education and health. Her current research interests focus on pedagogical issues related to teacher education, biology, and health sciences.

## **Author Profile: Ms. Babli Kumari**

Ms. Babli Kumari is a Senior Lecturer at Botho University, Botswana, with expertise in Hospital Administration, Health Informatics, and Higher Education Pedagogy. She holds an MBA in Marketing, an MSc in Hospital Health Information Administration (HHIA), and is currently pursuing a PhD in Hospital Administration. With over a decade of academic experience, she contributes to curriculum development, program accreditation, and interdisciplinary research in healthcare and education. Her work spans telehealth integration, maternal mortality, cervical cancer awareness, and intelligent tutoring systems in STEM education. She has published in reputed conferences (e.g., Harvard CAF, IASTED, HIMS) and journals, including the Academy of Entrepreneurship Journal. A certified diabetes educator and digital teaching specialist, she actively participates in institutional committees, research groups, and international collaborations.

## **Author Profile: Dr. Tampiwa Chebani**

Dr. Tampiwa Chebani is a senior lecturer in the Department of Health Sciences at Botho University. He is a medical doctor with an interest in academia and epidemiological research. He is currently pursuing a PhD in biostatistics and epidemiology. Dr. Chebani is committed to contributing to health research that addresses national and global health challenges, particularly non-communicable disease.

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### **Keywords:**

Health Literacy Risk Behaviors Academic performance

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## PAPER TITLE

# Impact of Health Literacy on Health Risk Behaviors and Academic Performance among Graduate Learners: Case study in Private University

**BU IRC**  
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**Abstract:**

The aim of the study is to investigate the impact of Health literacy on health risk behaviors and academic performance among graduate learners. The Quantitative paradigm with a cross-sectional descriptive survey method is used with the random sampling methods to select sample. A total number of 96 graduate learners participated in the study. The data was collected by the health literacy and Health Risk behaviors questionnaire. The results of research questions addressing learners' health literacy levels analyzed by percentiles showed 28% were low, 48% had medium and 24% had high health literacy levels. The results of Analysis of Variance and Z -statistics show that age group and gender show significant relationship with health literacy. The results of Analysis of Variance and Z-statistics show that Health behaviors on Physical exercises (frequency and duration); and nutrition, have a significant relationship with health literacy. The results of the Pearson correlation show a positive correlation which is not significant between Health literacy and academic performance. Based on the results, health literacy needs to develop through workshops and curriculum to promote healthy behaviors among learners and academic performance.





## **Perceived impact of Generative Artificial Intelligence on students' learning experiences: A case of Botho University, Lesotho**

### **Author Profile: Ms Likese Angelinah 'Mota**

She holds a Master of Science in Computational Finance, a BSc Honours in Statistics, and a Postgraduate Diploma in Higher Education. She is currently working as a Senior Lecturer at Botho University in Lesotho. Her research interests include contemporary issues in higher education, official statistics, and time series analysis.

### **Author Profile: Ms. Matau Rosina Mothabeng**

Matau Rosina Mothabeng is a dedicated Senior Lecturer in the Faculty of Business and Accounting at Botho University, committed to continuous learning and academic excellence. With expertise in research skills, learning management interfaces, course instruction, lecture development, and lesson planning, she actively engages in knowledge-sharing and professional development. She is in her final semester of a Master of Education in Higher Education at Botho University and obtained her MBA in International Business in 2016.

### **Author Profile: Ms. 'Makatiso Mpho Ntsekhe Seoane**

She is currently working as a Lecturer and Business Management Programme Coordinator at the National University of Lesotho and also serves as a Part-time Lecturer at Botho University Lesotho. She holds a Master's in International Trade and a Master's in Financial Management. Her research interests include economic trends, banking, and sustainable finance.

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#### **Keywords:**

Generative Artificial Intelligence (GenAI), Student Learning experience, Higher Education, perceived Impact, academic integrity, chatbot and virtual assistance.

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#### **Abstract:**

The use of generative artificial intelligence (GenAI) tools like ChatGPT have revolutionised tertiary education worldwide at a very fast pace. This research investigated the effect of GenAI on the learning experience of final year students at Botho University in an under-resourced country, Lesotho. Qualitative methodology was employed and convenience sampling was adopted. Data was collected through semi-structured questionnaires distributed to thirty-five (35) students from all three faculties, (Faculty of Business and Accounting, Faculty of Engineering and Technology and Faculty of Health and Education). The study found out that the students used GenAI tools mainly for understanding difficult academic content, preparation for assessments, and helping with research tasks. Students indicated that their understanding pace was enhanced, and they can could tackle case-study based problems more effectively, yet some of them were worried about overdependence of these technological tools and the unclear ethics in academic practice. The students agreed on the need for a policy at the university level for governing the use of AI and highlighted the need for cautious and controlled adoption. The research concludes that GenAI tools have the potential to provide useful learning support in under-resourced settings but need structured guidance, ethical frameworks, and institutional policies to facilitate effective and responsible use. Suggestions are made for AI literacy training, policy development, and redesigning assessments to promote critical thinking and academic integrity.





## **Exploring the computer applications used by STEM teachers to enhance self-directed learning in Bulawayo Metropolitan Province, Zimbabwe: Moving towards a more sustainable approach**

### **Author Profile: Mr. Ipelegeng Matibela**

Mr Ipelegeng Matibela is a chemistry lecturer in the Faculty of Science and Technology Education at the National University of Science and Technology (NUST) in Zimbabwe. He holds a Master Science Degree in Chemistry Education from NUST. He has presented in local conferences. His research interest include Science, Technology, Engineering, and Mathematics (STEM) education curricula, ICTs in Chemistry education, Innovations and inventions in Chemistry and Technology.

### **Author Profile: Mr. Nhlanhla Mkwelie**

Mr Nhlanhla Mkwelie is a Mathematics lecturer in the Faculty of Science and Technology Education at the National University of Science and Technology (NUST) in Zimbabwe. He holds a Master of Science Education degree in Mathematics from Bindura University of Science Education in Zimbabwe and is currently a Doctoral Student at University of South Africa (UNISA). He has published and presented his research work at local and international academic conferences. His research interests include Ethnomathematics, Technology integration in Mathematics Education, Teacher Professional Development, mathematics Education and Education for Sustainable Development.

### **Author Profile: Mr. Joseph Hlongwane**

Mr Joseph Hlongwane is a lecturer and researcher in the Department of Science, Mathematics, and Technology Education at the National University of Science and Technology (NUST) Zimbabwe. He holds a Master of Science Degree in Physics Education, a Bachelor of Education (Hons) in Physics, a Diploma in Education, and Diploma in Special Needs Education. He has presented in local and international conferences. Joseph has supervised several undergraduate and post-graduate students' dissertations. His research interests include Education for Sustainable Department, Artificial Intelligence, Physics, and Renewable Energy. Joseph has several publications and peer reviews to his name.

### **Author Profile: Mr. Andrew Mandla Mangena**

Mr Andrew Mandla Mangena is a Lecturer in Computer Science Education at the National University of Science and Technology (NUST) in Bulawayo, Zimbabwe. He works under the Department of Science and Mathematics Technology Education (SMTE) within the Faculty of Science and Technology Education (FSTE) at NUST. He is also a researcher with several publications, with a strong interest in Computer Science Education, Mobile Learning, STEM, STEAM, Self-Directed Learning, and Education for Sustainable Development. He possesses a Bachelor of Business Administration in Computer and Management of Information Systems (BBA CMIS), a Bachelor of Science with Honours in Computing (BSc Hons Computing), a Postgraduate Diploma in Science and Technology Education (PGDSTE), and a Master of Science in Education with a specialisation in Computer Science (MScEd Computer Science).





## PAPER TITLE

**Exploring the computer applications used by STEM teachers to enhance self-directed learning in Bulawayo Metropolitan Province, Zimbabwe: Moving towards a more sustainable approach****BU IRC**  
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STEM Education, Self-Directed Learning, Computer Applications, Sustainable Education

**Abstract:**

The rapid advancement of digital technologies has significantly transformed the education sector, particularly in Science, Technology, Engineering, and Mathematics (STEM) Education. This study explores the various computer applications used by teachers in Bulawayo Metropolitan Province to enhance self-directed learning (SDL) in STEM education to foster a more sustainable learning ecology. Computer applications have become essential tools in promoting SDL by providing students with access to interactive simulations, online tutorials, collaborative platforms, and personalised feedback. These tools support independent learning, inquiry-based exploration, and flexible access to content beyond the traditional classroom setting. Through a convergent parallel mixed-methods research design, the study examines how the teachers are using the computer applications in promoting self-directed learning and problem-solving skills. The data was collected from a stratified sample of 200 STEM teachers using questionnaires, semi-structured interviews and focus groups. Data was analysed thematically using ATLAS.ti 24 and descriptively using frequencies, mean and standard deviations. The study adhered to all ethical research practices to ensure the protection and dignity of all participants. The findings reveal that STEM teachers are gradually integrating a variety of applications such as GeoGebra, PhET simulations, YouTube tutorials, Google Classroom, and Microsoft Excel to support self-directed learning among learners. Teachers reported improved learner participation, independent problem-solving, and initiative-taking, especially in mathematics and science. This study underscores the importance of leveraging computer applications in STEM teaching to promote self-directed learning. The study concludes that while there is a growing awareness of the value of self-directed learning through computer applications, sustainable implementation requires targeted teacher training and improved digital infrastructure. In light of the findings, the study recommends that teachers to embrace various computer applications in their teaching to promote self-directed learning among their learners.





# Exploring Teachers' Perceptions Towards ChatGPT in Institutions of Higher Learning Lesotho

## **Author Profile: Ms. Tjaoane Retsepile**

Retsepile Tjaoane is a qualified Nurse Midwife with a Master's Degree in Public Health, specializing in Epidemiology and Health Statistics. She has extensive experience in HIV/AIDS, Tuberculosis (TB), Sexual and Reproductive Health, and Gender-Based Violence programs. Currently, she is a Senior Lecturer at Botho University in the Faculty of Health and Education. In addition to her professional role, Retsepile volunteers as a Member of the National Certification Committee for the Polio Eradication Initiative and the Measles Verification Committee. She guides documentation for certification and conducts site visits to validate immunization data. Her experience and commitment to health equity make her a valuable asset to any health initiative.

## **Author Profile: Prof. Luisa Mich**

Luisa Mich is an Associate Professor of Computer Science at the University of Trento. Her research interests, which are characterized as interdisciplinary, are in requirements engineering and include the application of AI tools and natural language processing systems, the use of creativity techniques, and the planning of web presence strategies. She has authored over 200 papers published in journals and conferences. She has served and serves on the organizational and program committees of numerous conferences. She has lectured and collaborated with several Italian and foreign universities. Currently, she teaches courses in Tourism and Business Information Systems. She has promoted numerous teaching initiatives in the area of information technology for science and humanities degree programs, both in Italy and abroad. Luisa Mich is a senior member of the IEEE Computer Society and the Association for Computing Machinery, and a member of the International Federation for Information Technology and Tourism. Since 2022, she has been co-editor-in-chief of the Information Technology and Tourism journal.

## **Author Profile: Ms. Mamonaheng Francina Selloane Ntsane**

Mamonaheng Francina Selloane Ntsane is a Senior Lecturer and Internship Team Leader at Botho University in Lesotho, with over a decade of experience as a language skills lecturer. She holds a Master of Arts degree with distinction in English Language and Linguistics and an Honours degree in Translation Studies. She is currently pursuing a PhD in Language Practice at the University of the Free State. Her academic and professional interests lie in effective communication, academic literacy, public speaking and translation.

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### **Keywords:**

Perceptions, Chat GPT, Teachers, Institutions of Higher Education

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## PAPER TITLE

# Exploring Teachers' Perceptions Towards ChatGPT in Institutions of Higher Learning Lesotho

**BU IRC**  
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**Abstract:**

There is an inevitable transformation in several digital transformation industries that has been indelible in institutions of higher learning. ChatGPT is among the popular AI tools used by teachers and students in higher education institutions. While there has been extensive research on the use and perception of the use of ChatGPT in institutions of higher education since its launch in 2022, most studies evaluated the perceptions of the use of ChatGPT among students; there are few studies which examined the perception and use of ChatGPT among teachers, especially in Africa. Understanding teachers' perceptions of using AI for learning contributes to factors that support the successful implementation of AI tools in education. This study will examine teachers' opinions regarding the use of ChatGPT for teaching and learning within a real university environment.

**Methods:** The case study was carried out at one University in Lesotho., The university staff's participation was selected through convenience sampling. Only lecturers who are aware of ChatGPT or use ChatGPT for educational purposes were eligible to participate in the study. This study adopts the Technology Acceptance Model (TAM), the thematic area that guided the methodology and data collection was the Perceived Usefulness of ChatGPT, Perceived Ease of use of ChatGPT, Attitudes towards ChatGPT and intention to use ChatGPT. The case study utilized semi-structured open-ended questionnaires and probing techniques to conduct interviews with teachers. The interviews were recorded, transcribed, and analysed using NVivo 11 software. The transcripts were coded according to themes related to teachers' perceptions of ChatGPT, such as ease of use, usefulness, external factors affecting PU and PEU, and teacher support.

**Results:** Educators at the Institution of Higher Learning largely view ChatGPT as a valuable tool for lesson planning, assessment design and grading. However, concerns about student misuse and cheating will decrease critical thinking. While many faculty acknowledge its potential benefits, challenges such as overreliance and a generic response remain. Supportive guidelines could enhance its integration into education

**Conclusion:** Many educators are open to adopting ChatGPT for planning lessons, but there are no clear policies regarding ChatGPT, leaving educators uncertain about its use. Effective integration requires clear policies and training to ensure the use of ChatGPT in teaching and learning





# Public-Private Partnerships for Sustainable Energy: The Role of CSR in Advancing Clean Energy Access in African Informal Settlements

## **Author Profile: Dr. Oluwagbenga Apata**

Dr. Apata is an electrical engineer and specializes in renewable energy, energy storage, power generation, and general electrical engineering. His technical proficiency encompasses detailed design reviews, support engineering, energy management, and instrumentation. His hands-on experience enables him to navigate the complexities of the energy sector, particularly in renewable energy and energy advisory roles. He is passionate about leveraging cutting-edge technologies to develop innovative solutions that meet the evolving needs of the industry, driving projects through the conceptual, preliminary, and pre-feasibility stages to successful execution.

## **Author Profile: Dr. Neville Mangwiro**

Dr Neville Mangwiro is a highly skilled Philanthropy, Social Investment, Research, Monitoring & Evaluation Specialist. He has a Doctor of Philosophy in Philanthropy and Social Investment in Africa (University of Witwatersrand-Wits Business School) degree, where his research topic was “exploring the social impact of corporate social investment in South Africa”. Neville has a Masters in Public and Development Sector Monitoring and Evaluation (University of Witwatersrand-Wits School of Governance). He holds a Cum Laude Postgraduate Diploma in Public and Development Sector Monitoring and Evaluation (University of Witwatersrand-Wits School of Governance), a Bachelor of Commerce in Accounting degree and has articles experience. He also holds a PMBOK Project Management Certification (University of Witwatersrand) and a Fundraising Management Certificate (Indiana University-Lilly Family School of Philanthropy).

### **Keywords:**

Public-Private Partnerships, Sustainable Energy, Corporate Social Responsibility, Informal Settlements, Clean Energy Access

### **Abstract:**

Public-Private Partnerships (PPPs) and Corporate Social Responsibility (CSR) initiatives are pivotal in addressing energy poverty within African informal settlements by promoting clean energy access. This research explores the synergy between CSR and PPPs to uncover how these frameworks drive inclusive development, mitigate climate risks, and improve the quality of life for underserved communities. Using five case studies, this study highlights how CSR-driven partnerships contribute to market creation, entrepreneurial experimentation, and sustainable energy innovations, focusing on solar and decentralised energy technologies. The research employs an integrated approach, combining the Technological Innovation Systems (TIS) framework and Stakeholder Theory to provide an in-depth analysis of technological adoption and stakeholder collaboration. The findings demonstrate that CSR initiatives are instrumental in market formation and building legitimacy for clean energy technologies. At the same time, stakeholder engagement ensures projects align with community needs and foster social equity. However, regulatory barriers, financial constraints, and power imbalances between stakeholders must be addressed to ensure long-term success. The research concludes by recommending that CSR efforts within PPP frameworks adopt participatory governance, innovative financing models, and robust policy support to enhance the scalability and sustainability of clean energy solutions in informal settlements.





# Evaluating the progress of Digital Technology Integration Beyond ICT in Education: A policy review Across African countries

## **Author Profile: Dr. Nomathemba Moyo**

Mrs Nomathemba Moyo - Physics Lecturer Faculty of Science, Mathematics and Technology Education National University of Science and Technology Zimbabwe. Since joining the National University of Science and Technology in 2020, I have been lecturing and researching in the field of physics Education. Previously I was lecturing Physics and Science and Technology at United college of education, a teacher training college in 2019 after high school teaching of Science and Mathematics for 20 years.

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### **Keywords:**

ICT integration, beyond ICT integration, digital technologies Digital technology integration

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### **Abstract:**

Global education agendas and SDG4 have unearthed the need for quality and access to education that aligns with global trends as emphasised by UNESCO in its integration ICT integration strategies to modernize education that close global competitive gaps. While many countries had established ICT policies across the continent, there is a growing need to adopt engaging, and pedagogically integrated digital technologies that foster development of 21st-century skills required by learners in the digital age. This study critically evaluates the progress of digital technology integration beyond Information and Communication Technologies (ICT) in teaching and learning across African countries. This study employs a policy review methodology in Content Analysis and Policy Evaluation Criteria lens to review ICT, digital technology integration policies, curriculum frameworks, implementation guidelines, and reports. It establishes the extent of Digital technology integration, beyond mere ICT skills acquisition and alignment with 21st-century education goals and global frameworks, how policies promote digital technologies integration, teacher capacity and infrastructure development and country commitment to developing digital curricula. Six purposively selected countries in North Africa, Central Africa, and Southern Africa were reviewed. Study findings reveal uneven progress beyond ICT integration. While some have made efforts to move toward comprehensive digitalization, others remain focused on foundational ICT goals. The study suggests that the policy frameworks should be updated to encourage strong investment in resources and the use of advanced digital technology based on digital curricula, aiming for a more effective and fair digital transformation in education systems throughout the continent.





# Mainstreaming Education for Sustainable Development in Zimbabwean Higher Education Institutions. A Systematic Literature Review

## **Author Profile: Mr. Mehluli Moyo**

Mehluli Moyo is an Accounting and Business Studies lecturer in the Faculty of Science and Technology Education at the National University of Science and Technology (NUST) in Zimbabwe. He holds a Master of Science Education degree in Accounting and Business Studies from National University of Science and Technology in Zimbabwe. He has taught a wide range of undergraduate and postgraduate courses, including Financial Accounting, Corporate Governance, and Entrepreneurship. His research interests include financial literacy, small business development, working capital management in public high schools and the integration of ICT in Accounting education. He has presented papers at local academic conferences.

## **Author Profile: Mr. Nhlanhla Mkwelie**

Nhlanhla Mkwelie is a Mathematics lecturer in the Faculty of Science and Technology Education at the National University of Science and Technology (NUST) in Zimbabwe. He holds a Master of Science Education degree in Mathematics from Bindura University of Science Education in Zimbabwe and is currently a Doctoral Student at University of South Africa (UNISA). He has published and presented his research work at local and international academic conferences. His research interests include Ethnomathematics, Technology integration in Mathematics Education, Teacher Professional Development, mathematics Education and Education for Sustainable Development.

### **Keywords:**

Education for Sustainable Development; Sustainable Development Goals; Higher Education Institution; 2030 Sustainable Development Agenda.

### **Abstract:**

Education for Sustainable Development (ESD) plays a vital role in the universal journey towards achievement of all seventeen 2030 Sustainable Development Goals (SDGs). The United Nations Sustainable Development Goal 4.7 proposes that Education for Sustainable Development should be mainstreamed in all levels of education. Education for Sustainable Development is considered to be key enabler of all other 2030 global goals. The aim of this study was to review literature on mainstreaming ESD in Zimbabwean Higher Education Institutions. A systematic search was conducted across databases including ERIC, JSTOR, Scopus, and Web of Science) using keywords and search syntaxes, such as 'Sustainable Development, sustainability, and 'Education for Sustainable Development in Higher Education on publications and policy documents spanning from 2015 to 2024. The study followed the Preferred Reporting Items for Systematic Review and Meta-analyses (PRISMA) methodology to search and report relevant articles on ESD yielded 22 studies that met the inclusion criteria. Thematic analysis using ATLAS.ti 24 qualitative data analysis software was done to categorise themes and trends in the findings of the study. The review of institutional policies, vision-mission statements, and curriculum practices showed that the ESD-related practices were mainstreamed in various sectors of higher education. The findings of this review highlights the notable progress in the implementation of ESD across different institutions of higher learning in Zimbabwe. In addition, the study illuminates the efforts that HEIs in Zimbabwe have made towards mainstreaming ESD in their curricula, policies and strategic documents. This study, therefore, provides a comprehensive understanding of the state of ESD implementation across Higher Education Institutions in Zimbabwe.





# Reimagining Learning Spaces and Education through Black Panther's Afro-futurism

## **Author Profile: Dr. Buhle Mphofu**

Buhle Mphofu is a senior lecturer with the department of Practical Theology and Mission studies at the faculty of Theology and Region, University of Pretoria. He is also an ordained minister with the Uniting Presbyterian Church in Southern Africa (UPCSA) and has a background in ecumenical work after he served as the Secretary of the African Communion of Reformed Churches (ACRC), a regional body of the World Communion of Reformed Churches (WCRC). His research focuses on the interface of Church and Society by interrogating intersecting themes in Christian mission, migration, cultures and borders through trajectories such as poverty, development, race and identity. These intersecting themes are explored through the lens of the United Nations (UN) Sustainable Development Goals (SDGs), life affirming values, Missional Theology in context, decolonization and socio-economic transformation.

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### **Keywords:**

Teaching, innovation, theology, colonialism, violence, identity crisis, futurism

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### **Abstract:**

This contribution utilizes a qualitative and interdisciplinary approach to explore how theological education can be reimagined using Afro-futurism inspired by Black Panther. The paper seeks to develop culturally relevant theological education by engaging with African Christian missions and the use of the Bible during the colonial era. By using the movie Black Panther as a lens, the paper links theology, identity, and race with technology through transdisciplinary dialogue to promote innovation in education and highlights how the integration of sci-fiction (Afro-futurism) can merge with theological education to present an opportunity for “transformative learning” toward sustainable education. The intersection of themes in theological education, identity, spirituality, and technology demonstrates how hybrid epistemologies can develop new forms of identity and belonging in the age of Artificial Intelligence (AI). The study concludes by highlighting that emerging themes depicted in Black Panther reflect challenges posed by dominant power structures in African communities and resonate well with the African experience – as an example of how learning institutions can use technology for “transformative learning” toward sustainable education.





## **A review of key issues in fashion and sustainability over the past decade 2014-2024**

### **Author Profile: Prof. Kaitano Dube**

Prof. Kaitano Dube is a Professor at Vaal University of Technology and a C2 NRF-rated researcher. He is one of the top leading tourism researchers locally and internationally, with true marks of academic leadership. An award-winning researcher and scholar, Prof Dube is also a visiting research professor at Emirates Aviation University, Dubai, United Arab Emirates with research interest in tourism, climate change, sustainability and curriculum.

### **Abstract:**

The fashion industry has been under pressure over the past decades to address its huge carbon and water footprints. Consumers and governments are demanding to reduce the environmental footprint of the fashion industry. This article reviews Web of Science Indexed publications published between 2014 and 2024 to examine key thematic issues and their evolution over the past decade. Using VOSviewer and the Web of Science Analysis tool, the study found that there has been a huge growth in the topic under consideration which signifies growing interest in the topic. Several publications highlight some of the key drivers of sustainability challenges within the fashion industry, such as its contribution to the production of disposable clothing and the promotion of rapid production cycles which increase pollution. The fashion industry is accused of failing to produce affordable sustainable fashion which is often seen as expensive by consumers, finding that, owing to increased pressure, the sector has been making efforts to improve their business sustainability through efforts such as consumer education, adoption of sustainable business models that take into consideration Sustainable Development Goals (SDGs), embarking on corporate social responsibility projects, recycling some of the material, and opening a value chain for second-hand clothing as a measure of ensuring sustainability. In addition, the sector is embarking on technological innovations to ensure sustainable practices within the sector. Moving forward, there is a need to foster sustainable practices within the industry and to push for more innovative solutions to the challenges faced by the fashion industry to deal with current sustainability barriers in the industry.





# Optimizing Public Investment: Choosing between Physical and Human Capital when the Rate of Return to Physical Capital Exceeds that of Human Capital

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INTERNATIONAL RESEARCH  
CONFERENCE 2025

## **Author Profile: Dr. Emmanuel Ameyaw**

Dr. Emmanuel Ameyaw is an economics and finance lecturer at the University of Ghana. He is also a fellow of the Department of Graduate Studies in Business and Accounting at Botho University, Botswana, where he teaches several MBA courses in economics, finance, and banking. He graduated from Tohoku University in Japan with a Ph.D. in Economics in November 2023 and began his academic career in 2024. Dr. Ameyaw's research interests are in the areas of monetary policy, long-run economic growth, and the role of the banking industry in the macroeconomy, and finance.

### **Abstract:**

A government has collected 1 million USD in taxes; should it build more schools or more factories? How should the government redistribute current income in an economic environment where more education by private agents crowds out physical capital, causes an excessive increase in the rate of return to physical capital relative to human capital, and lowers economic growth? Should the government redistribute current income by subsidizing human capital or physical capital accumulation? We compare these two policy options in a heterogeneous two-sector OLG model with model features tailored to that of least developed countries (LDCs). Both policies are growth-improving, but only the subsidization of human capital accumulation is welfare-improving. Moreover, subsidizing human capital accumulation also causes more economic growth than subsidizing physical capital accumulation. In accounting for growth, we found that the general equilibrium effect greatly dominates that of physical capital in our educational subsidies model. In contrast, the physical capital effect dominates the general equilibrium effect in our physical capital subsidies model. Overall, our results support direct government policies that subsidize human and physical capital accumulation in LDCs, but not government action that indirectly relaxes borrowing constraints, for example, deregulating the private student credit market.





# Awareness and utilization of HIV pre-exposure prophylaxis among adults in Botswana in the year 2021

## **Author Profile: Ms. Boago Elisha**

Miss Boago Elisha is a recent graduate with a degree in Bachelor of science in health information management from Botho University. I am passionate about health care and I'm enthusiastic about launching my career in a dynamic environment where I can grow and contribute my academic knowledge.

## **Author Profile: Ms. Babli Kumari**

Ms. Babli Kumari is a Senior Lecturer at Botho University, Botswana, with expertise in Hospital Administration, Health Informatics, and Higher Education Pedagogy. She holds an MBA in Marketing, an MSc. in HHIA (Hospital health Information Administration) and is currently pursuing her PhD in Hospital Administration. With over a decade of academic experience, she has contributed to curriculum development, program accreditation, and interdisciplinary research in healthcare and education. Her work spans telehealth integration, maternal mortality, cervical cancer awareness, and intelligent tutoring systems in STEM education. She has published in reputed conferences (e.g., Harvard CAF, IASTED, HIMS) and journals, including the Academy of Entrepreneurship Journal. A certified diabetes educator and digital teaching specialist, she actively engages in institutional committees, research groups, and international collaborations.

Research Interests: Healthcare Systems & Hospital Management; Health Informatics & Telemedicine; Maternal and Women's Health; Entrepreneurship Education & Adaptive Cognition; Artificial Intelligence in Education

## **Abstract:**

Advancement in biomedical science has led to the discovery of Pre-Exposure Prophylaxis (PrEP) as new strategies for prevention of Human Immunodeficiency Virus (HIV). Despite the proven effectiveness of PrEP in preventing HIV transmission, awareness and use remain low in various populations. This research project investigates the awareness and utilization of Pre-Exposure Prophylaxis (PrEP) among adults in Botswana in year 2021. A two-stage, stratified cluster sample survey was conducted among adults in Botswana. The survey defined an adult as someone who is aged 15-64 years. Data collection happened between March and August, and the sample size was 13,560 households. A total of 10,210 households completed a household questionnaire. Within the interviewed households, all adults aged 15-64 years who slept in the household the previous night were eligible to complete an individual questionnaire. Data was collected using a structured questionnaire that assessed the use and awareness of PrEP among adults (BAIS, 2021).

According to the Firth Botswana AIDS Impact Survey (2021), among all the eligible respondents, 26.4% had heard about Pre-Exposure Prophylaxis (PrEP), with higher rates among females at 30.1% than among males at 22.6%. It was also identified that 69.8% of adults who are HIV negative have heard about Pre-Exposure Prophylaxis (PrEP) and are willing to use it, 68.8% among females and 70.7% among males. The research also indicated that among adults who tested HIV negative, 11.2% reported that they had taken PrEP, 11.1% among females and 11.4% among males, and among all adults who heard of PrEP, it was higher in urban areas than in rural areas.

Recommendations includes develop actionable strategies for healthcare providers and policymakers to enhance education and accessibility of PrEP looking at the findings presented by these study, explore perceived barriers to PrEP use, including stigma, lack of information, and fear of side effects and increasing awareness of PrEP among adults through health education and program services such as radios, public service announcement and television.





# Stability and effectiveness of Integrated National Financing Frameworks in sustainable finance cooperation: Insights from evolutionary game theory

## **Author Profile: Mr. Emmanuel Ndhlovu**

Emmanuel Ndhlovu is a Senior Lecturer in Finance at Botho University. He is currently pursuing a PhD in Economics at the University of Botswana, with a research focus on sustainable finance mechanisms, including Integrated National Financing Frameworks (INFF), blended finance, and environmental, social, and governance (ESG) strategies.

### **Abstract:**

There is theoretical and policy motivation in understanding ways to drive capital towards SDG related assets. Economic networks like development/sustainable financing often face challenges of suboptimal financial flows and misaligned coordination. This study aimed to identify evolutionary strategies that can stabilize dynamics of sustainable finance cooperation within the new global development finance architecture focusing on Integrated National Financing Framework (INFF). In this paper, we make the first attempt to model a tri-partite game among emerging countries, UN Joint Program and private investors within a Stag Hunt framework. Our evolutionary game model formalizes the role of INFF alignment effort, de-risking mechanisms, technical support and capital mobilization rates in shaping equilibrium outcomes. MATLAB 2024b was employed to perform enhanced simulations of replicator dynamics, facilitating the generation of mathematical results. We conclude that achieving the classical evolutionary stable strategy is not a necessary condition for widespread cooperation in INFF implementation. INFF game can exhibit behavioural stability, where players naturally converge toward a cooperative interior equilibrium. However, to make INFF mechanism effective and resilient to external shocks, strategic deviation, the interior equilibrium can be transformed into an ESS by initial cooperation of other participants and compatible configuration of alignment effort, cost sharing and de-risking mechanisms.





# **Salience-Weighted Generalised Conditioning Model: Understanding Preference Shifts Towards SDG Investments**

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CONFERENCE 2025

## **Author Profile: Mr. Emmanuel Ndhlovu**

Emmanuel Ndhlovu is a Senior Lecturer in Finance at Botho University. He is currently pursuing a PhD in Economics at the University of Botswana, with a research focus on sustainable finance mechanisms, including Integrated National Financing Frameworks (INFF), blended finance, and environmental, social, and governance (ESG) strategies.

### **Abstract:**

The Addis Ababa Action Agenda underscores institutional investors as critical agents in achieving the Sustainable Development Goals (SDGs). Implicitly integrating SDG criteria into investment decisions necessitates a theory of preference change that account for both rational and non-rational decision mechanisms. This paper presents a stylized Salience-Weighted Generalized Conditioning model—drawing from Bradley (2009), Dietrich and List (2016) and Strohmaier and Messerli (2023)—to explain dynamic preference change in sustainable investment contexts. We complement our model with a simple agent-based simulation showing how investor preferences and allocations shift in response to informational, value-based and structural signals. Our model reveals the conditions under which preferences are stable or malleable, offering theoretical insights into SDG investment dynamics. Ultimately, our model advances policy theory by offering an endogenous, cognition-based explanation for shifts in investor behaviour in the context of sustainability transitions.





# **A Cooperative Approach for Knowledge-based Business Process Design in a Public Authority**

## **Author Profile: Mr. Mohammad Azarijafari**

Mohammad Azarijafari is a PhD researcher in Computer Science at the University of Trento. His current research focuses on the role of Artificial Intelligence in the automation of Business Processes. He also explores the application of Large Language Models and Generative AI in real-world interdisciplinary contexts, particularly in multilingual and low-resource settings. His broader research interests include Machine Learning, Natural Language Processing, and Information Retrieval. He is committed to advancing creative, ethical, and inclusive AI solutions that ensure fairness in AI and broaden access to its benefits. In addition to his academic research, he has extensive teaching experience, including university-level instruction in programming languages and online courses on designing web crawling robots for structured data extraction. He has contributed to multiple research projects in collaboration with academic and industrial teams and serves as a reviewer for leading journals in the field of Artificial Intelligence.

## **Author Profile: Prof. Luisa Mich**

Luisa Mich is an Associate Professor of Computer Science at the University of Trento. Her research interests, which are characterized as interdisciplinary, are in requirements engineering and include the application of AI tools and natural language processing systems, the use of creativity techniques, and the planning of web presence strategies. She has authored over 200 papers published in journals and conferences. She has served and serves on the organizational and program committees of numerous conferences. She has lectured and collaborated with several Italian and foreign universities. Currently, she teaches courses in Tourism and Business Information Systems. She has promoted numerous teaching initiatives in the area of information technology for science and humanities degree programs, both in Italy and abroad. Luisa Mich is a senior member of the IEEE Computer Society and the Association for Computing Machinery, and a member of the International Federation for Information Technology and Tourism. Since 2022, she has been co-editor-in-chief of the Information Technology and Tourism journal.

## **Author Profile: Prof. Michele Missikoff**

Michele Missikoff is an expert in Business Process Modeling, Knowledge Management, and Artificial Intelligence. He is the former Research Director at the Institute of Systems Analysis and Informatics (IASI) of the CNR (Rome, Italy) and Dean of the Faculty of Engineering and lecturer in Digital Innovation at the Uninettuno University. In the late 1990s, he founded the Laboratory of Systems and Enterprise Knowledge at the CNR. He collaborated with the European Commission for more than 20 years, coordinating, among other things, study groups on future digital developments in enterprises and Public Administration. He has participated, also with management responsibility, in more than twenty research projects, mostly at European level. He has collaborated with prestigious international research centres, from Stanford University (USA) to INRIA (France), from the IBM T.J. Watson laboratory (USA), to the Sorbonne University (France) and the University of Klagenfurt (Austria). He has published more than 200 scientific papers.





## PAPER TITLE

# A Cooperative Approach for Knowledge-based Business Process Design in a Public Authority

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## **Author Profile: Prof. Oleg Missikoff**

Oleg Missikoff is an international expert in Information Systems, Digital Transformation, and Artificial Intelligence, with extensive experience in the African context. He holds a PhD in Organisation of Business Information Systems from LUISS (Rome), a Master of Literature in Computational Archaeology from University of Oxford, and a Degree in Humanities from Sapienza University of Rome. He has extensive academic and managerial experience, having led international research projects. Over the past decade, he has carried out multiple missions in Africa, gaining deep insight into the continent's socio-cultural, economic, and technological realities. He has supported digital transformation strategies, including for the African Union and the Agency for Digital Italy (AgID), and co-founded the Earth 3.0 Foundation to promote AI and renewable energy in sub-Saharan Africa. His expertise spans advanced language models, prompt engineering, knowledge graphs, as well as AI applications in education, healthcare, tourism, and public management. He is recognised for his integrated approach, combining innovative technologies, local knowledge, and stakeholder engagement.

## **Abstract:**

Enterprises are currently undergoing profound transformations due to the unpostponable digital transformation. Then, to remain competitive, enterprises must adapt their organisational structures and operations. This organisational shift is also important for small and medium-sized enterprises. A key innovation frontier is the adoption of process-oriented production models. This paper presents a knowledge-based method to support business experts in designing business processes. The method requires no prior expertise in Knowledge Engineering and guides designers through a structured sequence of steps to produce a diagrammatic workflow of the target process. The construction of the knowledge base starts from simple, text-based, knowledge artefacts and then progresses towards more structured, formal representations. The approach has been conceived to allow a shared approach for all stakeholders and actors who participate in the BP design.





# Assessing and Enhancing the Quality of Online Examinations in Higher Education Institutions

## **Author Profile: Ms. Mamonaheng F.S Ntsane.**

Mamonaheng Francina Selloane Ntsane is a Senior Lecturer and Internship Team Leader at Botho University in Lesotho, with over a decade of experience as a language skills lecturer. She holds a Master of Arts degree with distinction in English Language and Linguistics and an Honours degree in Translation Studies. She is currently pursuing a PhD in Language Practice at the University of the Free State. Her academic and professional interests lie in effective communication, academic literacy, public speaking and translation.

## **Author Profile: Ms. Retsepile Tjaoane**

Retsepile Tjaoane is a qualified Nurse Midwife with a Master's Degree in Public Health, specializing in Epidemiology and Health Statistics. She has extensive experience in HIV/AIDS, Tuberculosis (TB), Sexual and Reproductive Health, and Gender-Based Violence programs. Currently, she is a Senior Lecturer at Botho University in the Faculty of Health and Education. In addition to her professional role, Retsepile volunteers as a Member of the National Certification Committee for the Polio Eradication Initiative and the Measles Verification Committee. She guides documentation for certification and conducts site visits to validate immunization data. Her experience and commitment to health equity make her a valuable asset to any health initiative.

## **Abstract:**

COVID-19 brought along a lot of opportunities and challenges to the education sector. During COVID-19 most institutions relied on online platforms or learning management systems and post-Covid, some institutions adopted online teaching modes and assessments. Botho University is not an exception. Examinations are critical to learning as they provide educators with a means of assessing student's understanding of the course content. While online assessments have advantages such as cost-effectiveness, less administration and less time consuming, they may also pose challenges. The proposed study intends to investigate the quality of online assessments for sustainable futures. Drawing from Bloom's Taxonomy as a prescribed guideline for examination paper setting, the study will employ document analysis to assess the quality of online-based examination question papers on selected modules across all faculties at Botho University.





# **DEVELOPING A MACHINE LEARNING MODEL FOR RECOGNISING AND PROCESSING VISUAL PATTERNS FROM GESTURE-BASED INPUTS FOR PEOPLE WITH HEARING OR SPEECH CHALLENGES**

## ***Author Profile: Mr. William Nkomo***

William Nkomo is a Senior Lecturer and a Manager in the faculty of Engineering and Technology at Botho University, Maseru Campus. He holds a MSc in Computer Science and is a certified Artificial Intelligence Instructor through IBM. With a strong academic and professional foundation, William is deeply passionate about research in Artificial Intelligence and Machine Learning, with a particular focus on Assistive Technologies. His work is driven by a commitment to embrace AI to improve accessibility and empower communities through innovative, inclusive solutions.

## ***Author Profile: Dr John Batani***

Dr John Batani is a seasoned academic with over a decade of university lecturing experience and is currently employed by Botho University (Lesotho) as a Fellow in the Department of Computer Science, Faculty of Engineering and Technology. He is an active researcher who has published journal articles, book chapters, books and conferences in IEEE, Elsevier and Springer outlets, among other renowned outlets. He is an Academic Editor of PLOS Digital Health & co-organised the BUIRC2025. His research interests include machine learning, applied information systems, health informatics, and emerging technologies for healthcare.

## ***Abstract:***

This research presents the development of an AI assistive technology (AIAT) designed to recognise visual effects through alternative hand-gesture inputs. The research aims at enhancing the accessibility of digital content for individuals with hearing or speech challenges. The intended assistive technology is a hybrid model that uses Convolutional Neural Networks (CNN) to recognise and process visual patterns from gesture-based inputs, thereby bridging the gap in deaf or speech perception. This study was inspired by the Ministry of Gender, Youth and Social Development during the launch of Assistive Technologies (AT) Framework in Lesotho (May 2024). The model was trained using leapGestRecog Hand gesture recognition dataset with 24000 images. The images are near infrared acquired by the Leap Motion sensor. By recognizing and processing these gesture-based inputs, the CNN model creates intuitive and contextually relevant visual representations that can be perceived and understood through movement. This technology empowers users with speech and or hearing impairments to interact with digital interfaces and multimedia content in a more inclusive and meaningful way. The research addresses key challenges in real-time gesture-based input recognition, accurate gesture-based mapping, and user adaptability, offering a transformative solution to enhance digital accessibility and improve the quality of life for individuals with disabilities.





# Leveraging Design Thinking and Indigenous Knowledge for Sustainable Innovation: The Case of ITIKI

## **Author Profile: Prof. Muthoni Masinde**

Prof. Muthoni Masinde is an internationally recognised leader in computer science, known for her research blending Indigenous Knowledge with advanced technologies to address challenges such as climate change, food security, and public health. Her work in AI, Machine Learning, Neural Networks, and IoT includes developing drought prediction systems that integrate traditional knowledge with computational models, benefiting small-scale farmers in Kenya, Mozambique, and South Africa. As the founder of ITIKI (Information Technology and Indigenous Knowledge with Intelligence), Prof. Masinde merges scientific and Indigenous methodologies for social good. Her research has earned her a C2 rating from the National Research Foundation (NRF), and she collaborates with global organisations, including USAID and the European Union. With over 100 publications, Prof. Masinde's work has appeared in journals such as Springer, IEEE, and ACM. She has secured significant funding, including a USD 500,000 grant from USAID's Securing Water for Food initiative. Prof. Masinde is a member of IEEE, IITPSA, and SAICSIT and is an expert reviewer for European Commission projects. Her applications, such as ITIKI Plus—a mobile agro-climate decision support app—and a malaria prediction model combining big data and Indigenous Knowledge, continue to have a lasting impact. Prof. Masinde has received several accolades, including the DST Distinguished Young Woman Scientist Award and Vice-Chancellor Excellence Awards from CUT. She has delivered keynote addresses at international conferences and mentored postgraduate students. Through her spin-off company, URIDA PTY LIMITED, she applies her research to create scalable solutions for rural communities.

## **Abstract:**

Achieving sustainable innovation in resource-constrained settings requires inclusive, context-aware approaches prioritising end-user participation. This paper presents the ITIKI (Information Technology and Indigenous Knowledge with Intelligence) system as a case study of how Design Thinking (DT) can drive socially embedded and scalable innovations. Originally developed as a drought early warning system that integrates Indigenous Knowledge Systems (IKS) with scientific data and artificial intelligence (AI) driven forecasts, ITIKI has since evolved into a versatile innovation framework applied across agriculture and health. The paper documents the iterative, human-centred design journey that led to the development of three impactful subsystems: ITIKI Plus (crop decision support), MOEWS (malaria early warning), and ITIKI-K (Agro-climate prediction). All three emerged from participatory co-design processes with rural communities in Kenya, Mozambique, and South Africa, achieving significant improvements in adoption, accuracy, and societal relevance. Results demonstrate increased crop yields (up to 14%), enhanced forecast precision (up to 98%), and strong user uptake, particularly among women. The findings reinforce the potential of DT to bridge traditional and scientific knowledge systems, foster inclusive innovation ecosystems, and address global challenges aligned with multiple Sustainable Development Goals (SDGs).





# **Leveraging Community-Based Ecotourism for Socio-Economic Empowerment: A Case Study of The People's Path Project in North-Western Botswana**

## **Author Profile: Ms. Olivia Unopa Nthoi**

With over 15 years of experience, Olivia Nthoi currently serves as a Sustainable Tourism Fellow at Botho University, Botswana. She has held the position of Adjunct Lecturer in Destination Management at Baden-Wuerttemberg Cooperative State University (DHBW) Lörrach, Germany 2022 - 2024. Olivia holds a Bachelor of Arts majoring in Environmental Science and Archaeology (earning her the prestigious University of Botswana Micheal Crowder award). Her academic journey includes a Post Graduate Diploma in Education (Environmental Science/Geography) and a Master's in Development Studies, where she explored Corporate Social Investment and Cultural heritage resource management. Currently due to graduate August 2025 for her Doctorate in Philosophy at Chinhoyi University of Technology, Olivia's focus was on designing an effective community participatory framework for sustainable tourism development in Botswana.

Beyond her qualifications, Olivia's impact has also extended as the Vice Chair of Botho University's Department of Hospitality and Sustainable Tourism research committee. She is also a founding member and board secretary of CSI Concepts Foundation trust, a committee member of Youth Unlimited Network Botswana, a Nhaba Museum member, former Secretary for the Botswana Association of Archaeology Professionals, and of Rotary Botswana. Her career includes an educational column, 'Let's talk Tourism and Heritage,' in the Guardian Botswana Newspaper. She actively publishes Academic Journal Papers, Book Chapters as well as attends and facilitates for various academic platforms, including conferences, public lectures, Guest lectures, academic exchanges and workshops.

As an enthusiast of community work, Olivia actively mentors, advocates, and catalyses progress in tourism, community participation, and development through her endeavours. This can be seen in work that she has managed to capacitate various community members alongside DHBW, Business Botswana, Botswana Tourism organisation, UNESCO and the African World Heritage Fund. Her pursuit of wisdom spans international educational experiences.

years in education, she has worked across various academic levels, from primary and secondary schools to her current role in tertiary teaching.

## **Author Profile: Dr. Tonderai Vumbunu**

Dr. Tonderai Vumbunu is a fellow in the Faculty of Business and Accounting. His publications and research interests mostly centre on product development, experiential learning, and sustainable diversification of tourism products in Global South countries. Tonderai is actively involved in establishing vibrant collaborations with industry stakeholders and other academic institutions, focusing on solution-oriented research that enhances the quality of learning and tourism products. His research in community-based tourism highlights enabling local populations to actively engage in and gain from travel operations. By fostering inclusive and collaborative approaches, he aims to create sustainable models that help to preserve cultural authenticity while supporting community development by encouraging an inclusive and cooperative approach.

## **Author Profile: Ms. Nametsegang Motshegwa**

Nametsegang Motshegwa is a Senior Lecturer in Hospitality Management the Faculty of Business and Accounting at Botho University. She holds a Post Graduate Certificate in Quality Assurance in Education (Botswana Open University), MCom degree in Tourism and Hospitality Management (Midlands State University), and a BBA degree in Tourism and Hospitality Management (University of Botswana). Ms Motshegwa has over 10 years' experience in Tourism and Hospitality Academia, having served as a lecturer at various private and public institutions of higher learning. As a researcher, Ms Motshegwa's interests are Food Safety, Foodways, Events Tourism, Sports Tourism, Knowledge management and Customer Perceptions in Tourism and Hospitality. Nametsegang actively participates in research, has presented at numerous international conferences, published several journal articles and serves as a member of the editorial board of Academy of Strategic Management Journal. She currently serves in the Hospitality and Tourism Subject Advisory Committee as chairperson, spearheading the evaluation of the Assessment Syllabus for Botswana Senior Secondary Education (BSSE) Hospitality and Tourism Studies that has been introduced at Secondary Education in Botswana. She is a Principal Examiner for Botswana Examinations Council. Outside the academic sphere, she mentors Tourism and Hospitality graduates' business start-ups





## **Integrating Vocational Education into Botswana's Secondary School Curriculum: Enhancing Skills Development and Youth Employability**

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CONFERENCE 2025

### **Author Profile: Mr. Modibedi Ndiane**

Mr. Ndiane is currently pursuing a Master's degree in Curriculum Design and Instruction at Botho University. He holds a Bachelor of Arts in Theology from Rusangu University, an Associate Degree in Interior Design from Limkokwing University, and a National Craft Certificate from Maun Technical College. With over a decade of experience working with youth curricula in the Seventh-day Adventist Church, Mr. Ndiane currently serves as Youth Director at the Church's national headquarters in Gaborone, Botswana. His academic interests are closely aligned with his practical role in youth development, particularly in designing and implementing faith-based educational programmes.

### **Author Profile: Prof. Jane Iloanya**

Prof. Iloanya has more than twenty-five years' experience in teaching, research and educational administration. She holds a PhD in Education with specialisations in Educational Management and Philosophy of Education. She taught at Institutions of Higher learning in Nigeria before moving to Botswana. Prof. Iloanya has been with Botho University for more than a decade now. Prof. Iloanya is a recipient of the Prestigious UNICEF Botswana research award. She is currently a member of the Tuning Africa Project (Teacher Education), a joint project funded by the European and African Unions for the Tuning and Harmonisation of African Higher Education Curriculum. She has authored well accepted journal articles and book chapters and presented at International Conferences both within and outside Africa. In October 2016, she was one of the very few Academics who won the Tuning Africa Research Award on Competence Based Teaching and Learning. Prof. Iloanya is currently the Head, Department of Education and Language Skills at Botho University and has supervised both undergraduate and more than fifty post graduate students' projects and dissertations. She serves as an external examiner for both masters and doctorate degree candidates within and outside Botswana.

### **Abstract:**

This research study explores strategies for integrating vocational education into Botswana's secondary school curriculum to enhance skills development and improve youth employability. It will examine the current state of vocational education, identify key vocational skills required by the country's growing industries, and assess best practices for effective integration into secondary education while evaluating challenges faced by educators and policymakers, particularly in rural areas. A mixed-methods research approach will be employed, which will combine quantitative data from questionnaires administered to students, teachers, and parents with qualitative insights from interviews that will be conducted with school administrators, policymakers, and industry representatives. Document analysis will supplement these findings by reviewing existing policies and curriculum frameworks, while stratified random sampling will ensure diverse participant representation. Descriptive statistical analysis will be applied to quantitative data, whereas thematic analysis will be used to interpret qualitative findings. The study is expected to provide a comprehensive understanding of vocational education's role in bridging the gap between the education system and labour market demands. Findings will also offer evidence-based recommendations for improving vocational education policies, curriculum design, and industry collaboration, ultimately contributing to national discussions on skills development, youth employment, and education reform in Botswana.





## **Artificial Intelligence in Sustainable Fashion: A Data-Driven Approach to Waste Reduction and Resource Optimisation**

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INTERNATIONAL RESEARCH  
CONFERENCE 2025

### **Author Profile: Mrs. Precious Charakupa Machera**

Mrs Precious Charakupa Machera Designation: External Quality Assurer (EQA) Association of Accounting Technician-Botswana Precious Charakupa Machera is a distinguished academic originally from Zimbabwe, currently based in Botswana, where she serves as an Association of Accounting Technicians (AAT) External Quality Assurer for Botswana Training Providers. With extensive experience in higher education, she has spent many years teaching at various Private higher Education Institutions (PHEIs) in Botswana, specialising in Information Technology. She demonstrates a strong commitment to academic excellence and capacity building in the region. In 2023, Machera earned a Master of Philosophy (MPhil) in Higher Education from Stellenbosch University, where she was honoured with the MPhil Academic Excellence Top Achiever Award in recognition of her exceptional scholarly performance. In 2024, her academic achievements and leadership potential were further acknowledged when she received the Golden Key International Honour Society Lifetime Membership Award from the Stellenbosch University Chapter. Currently, Machera is pursuing a PhD in Higher Education at Stellenbosch University. Her academic journey reflects a deep-seated passion for education and a dedicated effort to strengthen higher education systems in Botswana, Zimbabwe, and the broader region. Her ongoing research continues to provide critical insights into bridging the gap between academic theory and professional practice, particularly within fields such as accounting and information technology.

### **Author Profile: Prof Dr. Robert Pfumbudzayi Machera**

Professor Dr. Robert Pfumbudzayi Machera, PhD

Designation: Dean of Faculty of Business and Accounting at Botho University (in Botswana).

Professor Robert Pfumbudzayi Machera, PhD is the Dean of the Faculty of Business and Accounting at Botho University in Botswana. With a robust background in education, training and development, risk management, sustainability, finance, accounting, human resource management, innovation and entrepreneurship, he has held senior roles not limited to: Academic Board Member, Dean, Financial Director, General Manager and Company Secretary. His research interests focus on leadership, sustainability, micro-lending, entrepreneurship, social entrepreneurship, strategic management, innovation, risk management, finance and accounting. Completed an online certification Training Course for Supervisors of Doctoral Candidates at African Universities with the University of Stellenbosch (CREST). He has supervised over 80 postgraduate students. Prof. Robert Machera's contributions to academia have been recognized with a Golden Key International Honour Society Life Membership (Best performer at PhD Level 2020: North - West University). He holds an MPhil in Education and Training for Lifelong Learning - Adult Education with University of Stellenbosch, an Executive MBA Specializing in Entrepreneurship, and several accounting professional qualifications including Advanced Diploma for the Chartered Institute of Management Accountants (CIMA) and professional membership bodies such as a Fellow Member of the Chartered Governance (FCG), AIRMSA, MHRMBots and Acc Tech BICA.





## PAPER TITLE

# Artificial Intelligence in Sustainable Fashion: A Data-Driven Approach to Waste Reduction and Resource Optimisation



## Author Profile: Ms. Rumbidzai Tanya Machera

Ms Rumbidzai Tanya Machera

Designation: Data Analyst and Software Developer at Positive Performance (in Botswana). Rumbidzai Tanya Machera is a dynamic Data Analyst and Software Developer at Positive Performance, a leading firm in the Human Resources industry specialising in positive psychology and workplace well-being. She holds a Bachelor of Science (Honours) in Business Intelligence and Data Analytics (BIDA) with First-Class Honours from the Botswana Accountancy College, in partnership with the University of Sunderland (UK). A passionate advocate for technology-driven solutions, Rumbidzai actively participates in hackathons and innovation challenges by exploring new ways of solving real-world problems. In August 2024, she attended the 10th Annual GirlCode Hackathon in Botswana, where she collaborated with like-minded individuals to develop creative solutions. Beyond her technical expertise, she is deeply committed to community engagement. As a volunteer with the Diabetes Association of Botswana, she collaborates with diverse teams to promote diabetes awareness and support initiatives.

Her dedication to Sustainable Development Goal 3: Good Health and Well-being led her to organise a Diabetes Camp in July 2024, which provided education, support, and a sense of community to 200 children and adults. She believes in the power of knowledge-sharing and innovation, which she showcased at the International Conference on Electrical and Computer Engineering Researches (ICECER 2024), where she presented her research on "How Cloud Computing Technology Enhances the Performance of Small Businesses." With expertise in Python, Microsoft Excel, Power BI, and R programming, she applies data-driven insights to optimise decision-making processes and enhance business performance. Beyond data and technology, Rumbidzai is also a writer, poet, and motivational speaker, using words to inspire and empower others. She is the author of two books (A Force to Reckon and Trails of Poetry). With a unique blend of analytical thinking, storytelling, and a passion for impact, Rumbidzai continuously seeks ways to innovate, uplift, and transform communities through technology and the power of words.

### Abstract:

In the 21st Century, the buzzword is "sustainability." In a constantly evolving realm of fashion, it has become very important for both customers and companies to embrace sustainability. This study examined how artificial intelligence (AI) is utilised to advance sustainable fashion and design innovative strategies for effective promotions. The study analysed and examined the potential of AI-driven marketing strategies that enhance customer engagement, reduce waste, and optimise resource utilisation in the fashion industry. The findings in this paper outlined innovative strategies, opportunities, and key factors for creating smart, sustainable campaigns amid rapid technological and environmental shifts. By highlighting the role of technology in achieving sustainability goals, the research contributes to both scholarly debates and practical implementations. The study's limitations include its dependence on secondary data, which may not entirely reflect the nuances of primary data across various businesses. This study used the Meta - Analysis which is a statistical combination of quantitative studies that calculate a pooled effect size.





## **Harnessing the transformative power of Mobile Money towards saving among rural informal businesses in Lesotho**

### ***Author Profile: Ms. Mamotseli Ntlatlapa***

Mamotseli Ntlatlapa is an academic and researcher holding a Master of Commerce degree in Business from the University of Free State. With a background in Economics, Strategic Management and Business, Mamotseli's interests are shifting towards technology and innovation in the financial sector. With over six years of experience as a Lecturer, Mamotseli is currently a Senior Lecturer in the Faculty of Business and Accounting at Botho University where she has consistently demonstrated a passion for teaching, curriculum development, and student mentorship. Her research endeavours primarily focus on financial innovation, financial inclusion and financial technology towards improving businesses. She also maintains a strong interest in the growth of small, informal and women led businesses contributing to development of frameworks relevant for developing countries.

### ***Author Profile: Dr. Emmanuel Zhanda***

Dr. Emmanuel Zhanda is an academic fellow in the Faculty of Business and Accounting at Botho University in Lesotho with more than 18 years of experience teaching at the tertiary level. He has a Ph.D. in Human Resources Management-Public Administration from the University of Botswana, a Master in Business Administration from Zimbabwe Open University, a Master in Higher Education from Botho University, and a Bachelor of Business Studies (Honors) Degree from the University of Zimbabwe. Emmanuel has been an avid writer and researcher for the past 10 years. He has written 2 book chapters published with IPADA.

### ***Abstract:***

This study explored the role of Mobile money (M-money) in improving savings among rural informal businesses. M-money and other digital payment methods have improved in recent years, leading to increased financial inclusion in the formal financial system. The study was motivated by the growth of informal traders in rural who are still financially excluded. The study adopted a qualitative method, with informal traders in rural areas being the target population. A non-probability, convenience sampling technique was used with a sample size of twenty-five informal business owners from five districts. Primary data was collected using interviews while data was analysed using content analysis. The study revealed that the use of M-money has the potential to overcome the barriers to financial inclusion and enable money savings for informal rural businesses. Recommendations include intensified financial education initiatives and prioritising financial literacy for older adults and the poor.

**Keywords:** Informal businesses, Mobile Money, Financial Inclusion, Savings, Lesotho





## Evaluating the implementation realities of learner-centred methodology in Botswana Secondary Schools

### **Author Profile: Ms. Marang Mutuna**

Ms. Marang Mutuna is a seasoned higher education administrator in Botswana with more than three decades experience, currently serving as the Dean of Admissions at Botho University. With over a decade of experience at the institution, she has held various roles focused on student welfare, student recruitment and external relations. In her capacity as Dean, Mutuna has played a pivotal role in student outreach and community engagement initiatives. Notably, she has participated in donation drives to schools across Botswana and delivered motivational talks at events. Beyond her administrative duties, Mutuna has contributed to academic research, including translating academic abstracts into Setswana, thereby promoting inclusivity in scholarly communication. Mutuna's passion for education is shown by her continued lifelong learning experience currently pursuing her second master's degree being Master of Education in Curriculum Design and Instruction. She holds a Master's in English Language and Linguistics.

### **Author Profile: Prof. Jane Iloanya**

Prof. Iloanya has more than twenty –five years' experience in teaching, research and educational administration. She holds a PhD in Education with specialisations in Educational Management and Philosophy of Education. She taught at Institutions of Higher learning in Nigeria before moving to Botswana. Prof. Iloanya has been with Botho University for more than a decade now. Prof. Iloanya is a recipient of the Prestigious UNICEF Botswana research award. She is currently a member of the Tuning Africa Project (Teacher Education), a joint project funded by the European and African Unions for the Tuning and Harmonisation of African Higher Education Curriculum. She has authored well accepted journal articles and book chapters, and presented at International Conferences both within and outside Africa. In October 2016, she was one of the very few Academics who won the Tuning Africa Research Award on Competence Based Teaching and Learning. Prof. Iloanya is currently the Head, Department of Education and Language Skills at Botho University and has supervised both undergraduate and more than fifty post graduate students' projects and dissertations. She serves as an external examiner for both Masters and Doctorate degree candidates within and outside Botswana.

### **Abstract:**

The study evaluates the implementation realities of learner -centred teaching methodologies in secondary schools in Botswana. Despite the implementation of the learner –centred teaching methodologies in secondary school curriculum in Botswana, the question remains, how is the learner –centred curriculum actually being implemented by the teachers and other relevant stakeholders ? . The study is set to establish the challenges and successes of the learner-centred pedagogy over the years based on policies advocating for learner centred methodology approaches to teaching and learning. The study will target selected junior and senior schools in urban and rural areas in the South East region of Botswana. A qualitative research approach will be employed for the study, using semi-structured interview guides, document analysis and observation guides as data collection instruments. Research activities conducted globally in diverse contexts have pointed out gaps in the implementation of learner centred pedagogy despite the promotion of the methodology. Teaching has predominantly remained teacher led as such subjecting learners to passivity. The study seeks to establish the implementation realities in the context of Botswana and contribute to the immense research already carried out on the subject to guide policy direction in the Botswana education system and elsewhere, making some suggestions on how the learner – centred pedagogy should be properly implemented. The policy direction could, perhaps, be guided by the curriculum nuances. It is believed that the findings of the study will be valuable for policy makers, teachers, students, schools and the society at large.

Before the actual data collection is carried out, the researchers will seek consent from students to take part in the study voluntarily and parents to allow their children to participate in the study with the option to withdraw should they decide so for whatever reason.





## **Induction Experiences of Recently Appointed Health Sciences Lecturers at Good Shepherd Catholic College of Health Sciences, In Eswatini**

### **Author Profile: Mr. Thandeka Hamilton Mhlongo**

Mr Mhlongo is a professional nurse and a public health specialist. He holds a Master of Public Health and a Bachelor of Nursing Science. He has worked as a nurse for over six (6) years before joining the academia as a clinical instructor at a nursing school for about three (3) years and then as a lecturer until now. Mr Mhlongo is currently a final year student at Botho University, Botswana, pursuing his second master's degree - Master of Education in Higher Education.

### **Author Profile: Prof. Jane Iloanya**

Prof. Iloanya has more than twenty –five years' experience in teaching, research and educational administration. She holds a PhD in Education with specialisations in Educational Management and Philosophy of Education. She taught at Institutions of Higher learning in Nigeria before moving to Botswana. Prof. Iloanya has been with Botho University for more than a decade now. Prof. Iloanya is a recipient of the Prestigious UNICEF Botswana research award. She is currently a member of the Tuning Africa Project (Teacher Education), a joint project funded by the European and African Unions for the Tuning and Harmonisation of African Higher Education Curriculum. She has authored well accepted journal articles and book chapters, and presented at International Conferences both within and outside Africa. In October 2016, she was one of the very few Academics who won the Tuning Africa Research Award on Competence Based Teaching and Learning. Prof. Iloanya is currently the Head, Department of Education and Language Skills at Botho University and has supervised both undergraduate and more than fifty post graduate students' projects and dissertations. She serves as an external examiner for both Masters and Doctorate degree candidates within and outside Botswana.

### **Abstract:**

Induction programmes are designed to enable a smooth transition for new faculty members, providing them with critical resources, institutional expertise, and mentorship. A variety of exercises and resources are usually provided during the induction process to assist new lecturers in honing their administrative, research, and teaching abilities. However, induction programmes often vary amongst different higher education institutions and hence newly appointed lecturers often have different experiences of their induction. The aim of this study was to explore the induction experiences of newly appointed lecturers at Good Shepherd Catholic College of Health Sciences. A descriptive phenomenological case study research design was used to comprehend and characterize the actual induction experiences of newly- appointed lectures at Good Shepherd Catholic College of Health Sciences. Individual semi-structured interviews and in-depth probing were used to explore the induction experiences of nine (9) lecturers who have less than five (5) years of lecturing experience at the college. Content analyses was used to analyse the collected data in order to find important themes and trends within themes. Seven themes emerged, which were formal or structured induction, orientation and support, feedback and evaluation, support resources and materials, confidence and motivation, mentorship and guidance, communication and clarity of roles. The study findings highlighted systemic gaps in the college's induction framework, characterized by minimal formal induction, inadequate support structures, delayed resource provision, and poor communication channels. These finding may assist higher education institutions to enhance their onboarding processes, promote staff retention, and ensure high-quality teaching and learning outcomes.





## **The impact of internship on attainment of Botho Graduate Profile (BGP) attributes: a case of Botho University students' perspectives**

### **Author Profile: Dr. Tonderai Vumbunu**

Dr. Tonderai Vumbunu is a fellow in the Faculty of Business and Accounting. His publications and research interests mostly centre on product development, experiential learning, and sustainable diversification of tourism products in Global South countries. Tonderai is actively involved in establishing vibrant collaborations with industry stakeholders and other academic institutions, focusing on solution-oriented research that enhances the quality of learning and tourism products. His research in community-based tourism highlights enabling local populations to actively engage in and gain from travel operations. By fostering inclusive and collaborative approaches, he aims to create sustainable models that help to preserve cultural authenticity while supporting community development by encouraging an inclusive and cooperative approach.

### **Author Profile: Prof. Samuel Chingiro**

Prof. Samuel Chingiro holds a PhD in Economics, an MPhil in Development, and both MSc and BSc degrees in Economics. He is also a CIMA graduate. Currently serving as the Manager for Library, Teaching & Research Excellence at Botho University, Prof. Chingiro brings over two decades of academic and professional experience in higher education. He has published extensively in the fields of economics, development, and education, and is recognised for his thought leadership in promoting academic excellence and institutional research capacity. In addition to his academic contributions, Prof. Chingiro has been actively involved in numerous regional and international funded projects, collaborating with development agencies, research institutions, and cross-border academic networks. These projects have focused on areas such as economic development, education reform, skills enhancement, and digital transformation in tertiary education.

### **Abstract:**

The Botho Graduate Profile attributes are a combination of soft skills and values critical for producing well-rounded graduates who will seamlessly transition from the academic to the professional world upon completion of studies. Internships are a critical component of the learner-centred approach adopted by the University to adequately develop these attributes through practical experience and industry exposure. Based on the transformative learning theory, the study adopts a quantitative approach to assess the impact of internships on the attainment of BGP attributes based on the perspectives and experiences of students who have completed internships in workplaces that are aligned with their programs of study. Data will be collected through a structured questionnaire using a 5-point Likert scale. Statistical analyses such as multiple regression and moderation analysis will be conducted to explore the relationship between internship experiences and the enhancement of BGP attributes while also examining the moderating effect of the internship context (e.g., industry alignment, student demographics, program of study, and internship duration). By analysing these relationships, the study will provide empirical evidence on whether and how internships significantly enhance the acquisition of critical soft skills and values. The findings will inform data-driven improvements in internship program design and university curriculum. The research provides insight into the effectiveness of internships as a transformative learning experience for fostering well-rounded, employable graduate





## **Exploring the Impact of Work Integrated Learning (WIL) on student employability and industry Readiness: A case study of Accounting Students in Botho University in Botswana**

**BU IRC**11th BOTHO UNIVERSITY  
INTERNATIONAL RESEARCH  
CONFERENCE 2025

### **Author Profile: Dr. Ivy Rose Mathew**

Dr. Ivy Rose Mathew is the Pro-Vice Chancellor of Academics at Botho University. She is responsible for the implementation of the University's strategic plan with specific focus on academic and research excellence. Dr. Mathew has over 20 years of experience in teaching and administration. She has been instrumental in the founding and development of the Distance Learning campus at the University, implementation of Challenge Driven Education (in partnership with KTH Royal Institute of Technology, Sweden), COIL (Collaborative Online International Learning), Dual learning education (in partnership with DHBW, Germany), development of post graduate offerings and promoting research activities through international collaborations. She also headed the Quality division of the university and had immensely contributed to the quality assurance and enhancement initiatives including the accreditation of campuses and qualifications. She is currently leading EU funded projects on Graduate Employability, Open Science and Challenge Driven Education. She has a passion for ensuring that the students experience global learning through digital technologies and study abroad opportunities. Dr. Mathew has a PhD in Adult Education, Masters in Computer Applications, Bachelors in Mathematics and Certificate in Distance Education.

### **Author Profile: Dr. Priya Iyer**

With over two years as Pro Vice Chancellor & Director - People & Impact at Botho University, and a total of 15+ years in leadership roles within the same institution, this professional brings deep expertise in financial management, employability strategies, and organizational impact. A Chartered Accountant with a proven track record in finance, they excel at aligning institutional goals with people-focused strategies to enhance outcomes. Passionate about graduate employability, they contribute to initiatives that prepare students for dynamic job markets while fostering a culture of accountability and growth within their organization. Their collaborative approach and commitment to impact make them a valuable leader in higher education.

### **Author Profile: Prof. Dr. Robert Pfumbudzayi Machera**

Professor Dr. Robert Pfumbudzayi Machera, PhD

Designation: Dean of Faculty of Business and Accounting at Botho University (in Botswana).

Professor Robert Pfumbudzayi Machera, PhD is the Dean of the Faculty of Business and Accounting at Botho University in Botswana. With a robust background in education, training and development, risk management, sustainability, finance, accounting, human resource management, innovation and entrepreneurship, he has held senior roles not limited to: Academic Board Member, Dean, Financial Director, General Manager and Company Secretary. His research interests focus on leadership, sustainability, micro-lending, entrepreneurship, social entrepreneurship, strategic management, innovation, risk management, finance and accounting. Completed an online certification Training Course for Supervisors of Doctoral Candidates at African Universities with the University of Stellenbosch (CREST). He has supervised over 80 postgraduate students. Prof. Robert Machera's contributions to academia have been recognized with a Golden Key International Honour Society Life Membership (Best performer at PhD Level 2020: North - West University). He holds an MPhil in Education and Training for Lifelong Learning - Adult Education with University of Stellenbosch, an Executive MBA Specializing in Entrepreneurship, and several accounting professional qualifications including Advanced Diploma for the Chartered Institute of Management Accountants (CIMA) and professional membership bodies such as a Fellow Member of the Chartered Governance (FCG), AIRMSA, MHRMBots and Acc Tech BICA





## PAPER TITLE

# Exploring the Impact of Work Integrated Learning (WIL) on student employability and industry Readiness: A case study of Accounting Students in Botho University in Botswana



## Author Profile: Prof. Samuel Chingoiro

Prof. Samuel Chingoiro holds a PhD in Economics, an MPhil in Development, and both MSc and BSc degrees in Economics. He is also a CIMA graduate. Currently serving as the Manager for Library, Teaching & Research Excellence at Botho University, Prof. Chingoiro brings over two decades of academic and professional experience in higher education. He has published extensively in the fields of economics, development, and education, and is recognised for his thought leadership in promoting academic excellence and institutional research capacity. In addition to his academic contributions, Prof. Chingoiro has been actively involved in numerous regional and international funded projects, collaborating with development agencies, research institutions, and cross-border academic networks. These projects have focused on areas such as economic development, education reform, skills enhancement, and digital transformation in tertiary education.

## Author Profile: Professor. Olumide Jaiyeoba

Professor. Olumide Jaiyeoba got a PhD in Business Administration from Faculty of Business, University of Botswana. Olumide Jaiyeoba is a member of African Academy of Management and Marketing Science Institute. He is currently the Head of Department of Graduate Studies in Business and Accounting at Botho University where he provides academic and research leadership for Graduate Programmes.

He has about 60 Publications to his credit in the Business Field as well as 25 years of experience in Tertiary Education in Botswana. He has attended local and international conferences including International Business Conference and African Academy of Management as well as a reviewer. He was also a Lead Researcher in the recently funded GIZ TVET Project on Youth Employability in Botswana and also Lead Researcher for a funded Project on Black Friday amongst Generation Y and Hydroponic Project funded by Ashesi University in Botswana. He is currently supervising 9 Doctorate students and has Graduated 1 Doctorate student.

## Abstract:

The evolving dynamics of the global job market necessitate a change in how Universities equip their graduates with the relevant skills and competencies required for the workforce. In Botswana, one of the primary challenges faced by University graduates particularly those from the Faculty of Business and Accounting (FBA) is the lack of practical experience and exposure to real world industry environments. This lack of experience often leads to a mismatch between the skills acquired during academic training and competencies required by employers. As a result, many graduates face difficulties in securing jobs or struggle to transition smoothly into their professional carriers. This study seeks to confront the challenge of enhancing graduate employability within Botswana with Telescopic insights into Accounting students. It surveys existing approaches and initiatives in the Botswana higher education sector context and then evaluates a Work Integrated Learning (WIL) framework amongst Accounting students in Botho University. A social constructivist approach using a qualitative methodology will be adopted to undertake the proposed research. A purposive sampling protocol will be employed to select groups of participants as stakeholders of the envisaged research outcome. A total of 24 interviews and focus group sessions involving 57 participants will be conducted. A robust thematic data analysis which seeks to explicate perspectives, perceptions and expectations will be discerned amongst Accounting students in order establish the contribution of WIL to enhance graduate employability. The proposed study is expected to make managerial and theoretical contribution to our understanding of attitudes and expectations regarding current state of employability in the Botswana context using the Dual Learning model approach that set the platform for vital area of University practice in line with Sustainable Development Goals.





## **Integration of unemployed inhabitants by developing employable skills for mutual benefits between the neighbouring communities and a Game Reserve**

### **Author Profile: Dr. Ivy Rose Mathew**

Dr. Ivy Rose Mathew is the Pro-Vice Chancellor of Academics at Botho University. She is responsible for the implementation of the University's strategic plan with specific focus on academic and research excellence. Dr. Mathew has over 20 years of experience in teaching and administration. She has been instrumental in the founding and development of the Distance Learning campus at the University, implementation of Challenge Driven Education (in partnership with KTH Royal Institute of Technology, Sweden), COIL (Collaborative Online International Learning), Dual learning education (in partnership with DHBW, Germany), development of post graduate offerings and promoting research activities through international collaborations. She also headed the Quality division of the university and had immensely contributed to the quality assurance and enhancement initiatives including the accreditation of campuses and qualifications. She is currently leading EU funded projects on Graduate Employability, Open Science and Challenge Driven Education. She has a passion for ensuring that the students experience global learning through digital technologies and study abroad opportunities. Dr. Mathew has a PhD in Adult Educa

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### **Author Profile: Ms. Olivia Nthoi**

With over 15 years of experience, Olivia Nthoi is a Sustainable Tourism Fellow at Botho University, Botswana. She previously served as an Adjunct Lecturer in Destination Management at DHBW Lörrach, Germany (2022–2024). Olivia holds a BA in Environmental Science and Archaeology (recipient of the University of Botswana Michael Crowder award), a Postgraduate Diploma in Education, and a Master's in Development Studies focused on Corporate Social Investment and Cultural Heritage. She is set to complete her PhD in August 2025 at Chinhoyi University of Technology, where her research centres on community participation frameworks in sustainable tourism.

She has served as Vice Chair of Botho University's Hospitality and Sustainable Tourism research committee and is a founding board member of the CSI Concepts Foundation. Olivia has contributed to multiple organizations, including Youth Unlimited Network Botswana, Nhabe Museum, and the Botswana Association of Archaeology Professionals. Her work spans academic publishing, newspaper columns, guest lectures, and international conferences. Passionate about community engagement, she has collaborated with DHBW, UNESCO, Botswana Tourism, and Business Botswana to empower local communities in tourism and heritage development.





## PAPER TITLE

## Comparing Economic viability of Hydroponic systems for Commercial plant production

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CONFERENCE 2025

### **Author Profile: Dr. Shantha Indrajith Hikkaduwa Liyanage**

Dr. Shantha Indrajith Hikkaduwa Liyanage PhD (RSA), PhD (USA), MBA(UK), LLB (Sri Lanka)

I have developed knowledge and skills locally and internationally through various academic & professional capacities during my career life of thirty (35) years such as Academic Lecturer, Academic researcher, Examiner, Curriculum developer, Authour, Corporate executive, Business Consultant, Accountant, Auditor, Practicing lawyer (Commercial, Civil, Criminal & Labour). He is presently attached to Botho University as a fellow at Faculty of Business and Accounting since 2014. He has presented thirty research papers at international conferences, published nineteen chapters and eight research papers in international journals, and reviewed one hundred and thirty-four (134) reviews for research papers for ten indexed journals from Springer Nature, Wiley, Elsevier, Taylor & Francis, Emerald Insight, and IGI Global. In addition, he has reviewed research papers for professional association, and Universities. His research has focused on Business Management/leadership/strategy/structure, Business Law, Education (Curriculum & Pedagogies), Sustainability, Entrepreneurship, Corporate Governance, Energy, and Water. He has supervised forty-two undergraduate research projects and five theses for postgraduates.

#### **Keywords:**

Integration of rural communities, economic, social, and environmental challenges, focus group interviews, Knowledge and skills, vocational training, tourism and hospitality sector.

#### **Abstract:**

Northern Tuli Game Reserve (Notugre) and the wider area of Bobirwa district have well-known private game reserves in Botswana. They provide game drives, safari experiences including local village tours, and high-quality hunting safari experience in a controlled hunting environment. These game reserves need employees for diverse game reserve activities, including tourism and hospitality, wildlife management and conservation and they expect employees from the surrounding villagers rather than outside because village employees can be retained for a longer term not only for the sustainability of their businesses but also for the villages. Though villagers are poverty-stricken are not adequately integrated into these game reserves. Hence, the purpose of the research is to ascertain why villagers, and the employers (game reserves) are not integrated together and how they can be integrated for mutual benefits.

The why and How questions mentioned above are answered by an inductive analysis of qualitative data collected from ten focus group interviews in which 61 representatives of nine villages surrounding the Notugre and the wider area of Bobirwa district participated. The above sample of nine villages represent the approximate total population of 33,883. The analysis found that there is a knowledge and skill mismatch between the villagers and employers of Notugre and the wider area of Bobirwa district though some of the villagers have completed their senior and tertiary education. It was further found that the knowledge and skill training institutional mechanism enable these two stakeholders to bridge the knowledge and skill gap between the villagers to be employed and the employers. These findings shed light on both stakeholders to take positive actions to bridge the knowledge and skills gap of villagers to be integrated into Notugre and the wider area of Bobirwa district.





## **Comparing Economic viability of Hydroponic systems for Commercial plant production**

### **Author Profile: Dr. Aparna Kadiyala**

Dr. Aparna Kadiyala is a Fellow in Education within the Faculty of Health and Education at Botho University, with over 27 years of teaching experience across Botswana. She has served in various academic institutions including Botho University, the University of Botswana, Tonota College of Education, and several secondary schools. Her expertise spans teacher education, biological and chemical sciences, and health education, with teaching experience at diploma, degree, and master's levels.

She holds a Doctor of Philosophy in Education, a Master of Philosophy in Education, a Master of Education with a specialization in Natural Science Education, a Master of Science, a Bachelor of Science, and a Bachelor of Education. She actively supervises research projects across all academic levels and has published papers in the fields of science education and health. Her current research interests focus on pedagogical issues related to teacher education, biology, and health sciences.

### **Author Profile: Mr. Stowello Faro Kunzvi**

Mr. Stowello Faro Kunzvi is a lecturer in Accounting with over 20 years of experience in higher education, complemented by more than 16 years in the banking sector. He holds a Master's in Higher Education and an MBA, bringing a strong blend of academic insight and industry expertise to his teaching and research. His current research focuses on the computerisation of local municipalities, examining the impact of digital transformation on financial accountability and public sector efficiency. Mr. Kunzvi is passionate about bridging theory and practice in accounting education and contributing to the advancement of public financial management through scholarly engagement.

### **Author Profile: Mr. Sivakumar Venkataraman**

Fellow, Department of Health Sciences, Botho University

Mr. Sivakumar Venkataraman is currently serving as a Fellow in the Department of Health Sciences at Botho University. He holds a Master of Computer Applications (MCA), a Master of Philosophy in Computer Science (M.Phil), and a Master of Education in Higher Education (M.Ed).

With over 21 years of combined academic and industry experience, he brings a wealth of knowledge and expertise to both teaching and research. A researcher, Mr. Venkataraman has actively contributed to the academic community by presenting papers at national and international conferences. His research work has been published in high-impact journals, including DHET-accredited and Scopus-indexed publications.

Research interests include Education, Networking, Cybersecurity, Data Mining, and Big Data

### **Author Profile: Ms. Mini Sebastian**

Ms. Mini Sebastian, an Indian national, is a Senior Lecturer in Accounting and Finance at Botho University, with over 18 years of teaching experience. She holds a Master of Commerce (M.Com) degree from Mahatma Gandhi University, India and a Post Graduate Diploma in Higher Education (PGDHE) from Botho University. Her expertise includes Management Accounting, Audit and Assurance, Financial Accounting, Computerised Accounting and Company Law. She has published in IJRCM and co-authored three articles in The Journal of Business Strategy Finance and Management.





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Dr. Shantha Indrajith Hikkaduwa Liyanage PhD (RSA), PhD (USA), MBA(UK), LLB (Sri Lanka)

I have developed knowledge and skills locally and internationally through various academic & professional capacities during my career life of thirty (35) years such as Academic Lecturer, Academic researcher, Examiner, Curriculum developer, Authour, Corporate executive, Business Consultant, Accountant, Auditor, Practicing lawyer (Commercial, Civil, Criminal & Labour). He is presently attached to Botho University as a fellow at Faculty of Business and Accounting since 2014. He has presented thirty research papers at international conferences, published nineteen chapters and eight research papers in international journals, and reviewed one hundred and thirty-four (134) reviews for research papers for ten indexed journals from Springer Nature, Wiley, Elsevier, Taylor & Francis, Emerald Insight, and IGI Global. In addition, he has reviewed research papers for professional association, and Universities. His research has focused on Business Management/leadership/strategy/structure, Business Law, Education (Curriculum & Pedagogies), Sustainability, Entrepreneurship, Corporate Governance, Energy, and Water. He has supervised forty-two undergraduate research projects and five theses for postgraduates.

### **Abstract:**

The main aim of the research is to assess and compare the economic viability of small, medium and large-scale plant production. The quantitative approach incorporating both experimental and survey methods is employed to compare the economic viability of hydroponic systems for plant production. A random sampling method is used to select six Hydroponic systems in Botswana. Data Collection involves experimental data and survey data using research questionnaire targeting small, medium and large hydroponic systems for plant production. The research questions determining the profitability and economic viability of small, medium and large hydroponic systems will be analysed by calculating Net Present Value, Internal Rate of Return and Benefit Cost ratio and sensitivity analysis. The research question addressing comparing the profitability and economic viability of hydroponic systems for plant production will be analysed by t-test. Maximum Likelihood Estimation (MLE) will be applied to statistically estimate hydroponic systems' performance from small scale to medium and large-scale Commercial plant production in terms of Net Present Value, Internal Rate of Return. Based on the findings, suggestions and recommendations will be provided to enhance economic sustainability in hydroponic systems.





## **The Determinants of University Service Quality: A Panacea for long term success for HEI**

### ***Author Profile: Mr. Wilbert Chidaushe***

Mr. Wilbert Chidaushe is a senior lecturer of Accounting & Finance at Botho university, Gaborone campus. He is awaiting the results of the Doctoral degree in banking and finance from Zimbabwe Open University. Mr. Chidaushe is an active researcher in many research fronts, whose research interest focuses on the following domains Banking, Finance, Geopolitical Risk, Derivatives, Service Quality Assurance, Sustainability & Green Finance. Mr Chidaushe has published 15 publications in open access peer review journals focusing on promoting development in the global money and capital markets and including the money and capital markets of the African continent.

### ***Author Profile: Ms. Precious Onneile Alade***

Precious Onneile Alade is a Chartered Global Management Accountant and academic researcher with interdisciplinary expertise at the intersection of finance, corporate governance, and sustainable development. She holds professional designations from both the Chartered Institute of Management Accountants (CIMA) and the Botswana Institute of Chartered Accountants (BICA), and currently serves as a Senior Lecturer at Botho University.

### ***Author Profile: Ms. Alice Monyi***

Ms Alice Monyi is a Lecturer in the Faculty of Health & Education-Botho University. An experienced Informatics lecturer with a strong background in health information systems, data analytics, and digital health. Dedicated to educating future professionals on the integration of technology and healthcare to improve patient outcomes and system efficiency

### ***Author Profile: Ms. Mini Sebastian***

Ms. Mini Sebastian, an Indian national, is a Senior Lecturer in Accounting and Finance at Botho University, with over 18 years of teaching experience. She holds a Master of Commerce (M.Com) degree from Mahatma Gandhi University, India and a Post Graduate Diploma in Higher Education (PGDHE) from Botho University. Her expertise includes Management Accounting, Audit and Assurance, Financial Accounting, Computerised Accounting and Company Law. She has published in IJRCM and co-authored three articles in The Journal of Business Strategy Finance and Management.

Total publications in open peer reviewed journal to date: 3





## PAPER TITLE

**The Determinants of University Service Quality: A Panacea for long term success for HEI****BU IRC**  
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INTERNATIONAL RESEARCH  
CONFERENCE 2025**Author Profile: Ms. Stegi Shine**

Stegi Shine, Senior Lecturer in Faculty of Business and Accounting.

Master Of Education In Higher Education (M.Ed): 2019, Botho University, Gaborone, Botswana.

Master of Commerce, Mahatma Gandhi University, Kerala, India.

Bachelor Of Commerce, Mahatma Gandhi University, Kerala, India.

**Abstract:**

The research explored the determinants of university service quality in higher education institutions in Botswana. The significance of the study was to avail the key service characteristics that contributed towards quality in higher education institutions in Botswana. The methodology of the study was based on quantitative research involving testing of hypothesis. The sample of the study was based on 972 respondents that were selected using simple random sampling of university students. The data collected was subjected to reliability analysis, confirmatory factor analysis before running structural equation modelling based on AMOS. The study applied analysis of moments in running structural equation modelling to test the hypothesis of the study. The study revealed that university service quality is significantly and positively correlated with three constructs including university values among others.





## **The Determinants of Green Universities in Botswana: A sine qua non for green satisfaction**

### **Author Profile: Mr. Wilbert Chidaushe**

Mr. Wilbert Chidaushe is a senior lecturer of Accounting & Finance at Botho university, Gaborone campus. He is awaiting the results of the Doctoral degree in banking and finance from Zimbabwe Open University. Mr. Chidaushe is an active researcher in many research fronts, whose research interest focuses on the following domains Banking, Finance, Geopolitical Risk, Derivatives, Service Quality Assurance, Sustainability & Green Finance. Mr Chidaushe has published 15 publications in open access peer review journals focusing on promoting development in the global money and capital markets and including the money and capital markets of the African continent.

### **Author Profile: Ms. Precious Onneile Alade**

Precious Onneile Alade is a Chartered Global Management Accountant and academic researcher with interdisciplinary expertise at the intersection of finance, corporate governance, and sustainable development. She holds professional designations from both the Chartered Institute of Management Accountants (CIMA) and the Botswana Institute of Chartered Accountants (BICA), and currently serves as a Senior Lecturer at Botho University.

### **Author Profile: Ms. Alice Monyi**

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### **Author Profile: Ms. Mini Sebastian**

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Total publications in open peer reviewed journal to date: 3





## PAPER TITLE

**The Determinants of Green Universities in Botswana: A sine qua non for green satisfaction****Author Profile: Ms. Stegi Shine**

Stegi Shine, Senior Lecturer in Faculty of Business and Accounting.

Master Of Education In Higher Education (M.Ed): 2019, Botho University, Gaborone, Botswana.

Master of Commerce, Mahatma Gandhi University, Kerala, India.

Bachelor Of Commerce, Mahatma Gandhi University, Kerala, India.

**Author Profile: Mr. Martin Tatenda Dzimbanhete**

Mr. Martin Tatenda Dzimbanhete is a Public Health Specialist and Academic who is a lecturer at Botho University's Faculty of Health and Education. His research interests include Education Management, Infectious diseases and non-communicable diseases. His notable achievements include an oral presentation at the 9th TEPHINET Global Scientific Conference that was held at Chiang Mai Thailand in August 2017.

**Abstract:**

The study explored the determinants of a green university in Botswana. The purpose of this research is to evaluate universities' greening initiatives and ascertain those demand-pull variables that cause universities to embark upon greening practices. The study was quantitative method research based on a sample of 800 university students that were randomly selected from four university based in Botswana. The study applied SPSS and AMOS to run structural equation modelling in testing the hypotheses. The study revealed that green university is significantly and positively correlated with regulatory pressure, green facilities, student preferences, green research and innovation, food and recycle, carbon emission inventory and stakeholders' satisfaction. However green university was observed to have a significant and negative association with green communities.





## **Leadership Gender Diversity as a Driver of the Better Sustainability**

### **Author Profile: Mr. Andrey Bogdanov**

Interim CEO of Risk Insights, a family-owned data science company with a key focus on ESG. He is a former Board Member of the World Economic Forum New Champions South Africa Country Chapter. His professional career spans around the Globe, from working in the banking sector, spending 16 years in a Fortune 500 multinational company as executive responsible for finance and treasury in various regions and continents. Andrey is a published researcher and recently contributed to a chapter on Leadership Gender Diversity as a Factor Driving ESG Disclosure: Overview of the Global and Emerging Markets in Contemporary Sustainable Organisational Practices book, published by Springer in 2024. He is an international speaker and actively participates in the global ESG dialogue. He has served on multiple boards.

### **Abstract:**

This paper investigates the role of leadership gender diversity in shaping corporate Environmental, Social, and Governance (ESG) ratings in Africa with focus on South Africa. As ESG considerations gain momentum among investors and regulators, the question of how board-level gender diversity influences sustainability outcomes has become increasingly relevant. Grounded in stakeholder, legitimacy, gender socialisation and considering signalling, critical mass, and token theories, this study analyses ratings and gender composition data of JSE-listed companies for four years (1999-2022). The study analyses history, current trends in sustainability and ESG disclosure, sustainability priorities and level of ESG disclosure / ESG regulation in Global North and Global South countries, some of the factors affecting attention to ESG matters, including gender and particular gender factors influencing it. It also looks at the state of gender diversity in various parts of the world and the participation of women in corporate leadership. It uses unique homogeneous data and AI-powered ratings of Risk Insights awarded among others by the World Economic Forum (multiple awards), the Environmental Finance (multiple awards), the Institute of Risk Management among others. Using correlation analysis, the study explores the relationship between the presence of women on corporate boards and firm-level ESG ratings. The findings indicate how particular combination of the gender diversity on the board has a positive correlation of different strength and significance with overall ESG ratings. The research contributes to the growing literature on corporate governance and sustainable finance in emerging markets by providing South Africa-specific empirical evidence. It highlights gender diversity in corporate leadership as a potential driver of ESG performance. Overall, findings send important messages for regulators, institutional investors, and corporate leaders aiming to promoting inclusive governance).





## **Student Engagement in Accounting Internships: Bridging the Gap between Academic Theory and Professional Practice – A case for Private Higher Education Institutions**

### **Author Profile: Mrs. Precious Charakupa Machera**

Precious Charakupa Machera is a distinguished academic originally from Zimbabwe, currently based in Botswana, where she serves as an Association of Accounting Technicians (AAT) External Quality Assurer for Botswana Training Providers. With extensive experience in higher education, she has spent many years teaching at various Private higher Education Institutions (PHEIs) in Botswana, specialising in Information Technology. She demonstrates a strong commitment to academic excellence and capacity building in the region.

In 2023, Machera earned a Master of Philosophy (MPhil) in Higher Education from Stellenbosch University, where she was honoured with the MPhil Academic Excellence Top Achiever Award in recognition of her exceptional scholarly performance. In 2024, her academic achievements and leadership potential were further acknowledged when she received the Golden Key International Honour Society Lifetime Membership Award from the Stellenbosch University Chapter.

Currently, Machera is pursuing a PhD in Higher Education at Stellenbosch University. Her academic journey reflects a deep-seated passion for education and a dedicated effort to strengthen higher education systems in Botswana, Zimbabwe, and the broader region. Her ongoing research continues to provide critical insights into bridging the gap between academic theory and professional practice, particularly within fields such as accounting and information technology.

### **Author Profile: Prof Dr. Robert Pfumbudzayi Machera**

Professor Robert Pfumbudzayi Machera, PhD is the Dean of the Faculty of Business and Accounting at Botho University in Botswana. With a robust background in education, training and development, risk management, sustainability, finance, accounting, human resource management, innovation and entrepreneurship, he has held senior roles not limited to: Academic Board Member, Dean, Financial Director, General Manager and Company Secretary. His research interests focus on leadership, sustainability, micro-lending, entrepreneurship, social entrepreneurship, strategic management, innovation, risk management, finance and accounting. Completed an online certification Training Course for Supervisors of Doctoral Candidates at African Universities with the University of Stellenbosch (CREST). He has supervised over 80 postgraduate students. Prof. Robert Machera's contributions to academia have been recognized with a Golden Key International Honour Society Life Membership (Best performer at PhD Level 2020: North - West University). He holds an MPhil in Education and Training for Lifelong Learning - Adult Education with University of Stellenbosch, an Executive MBA Specializing in Entrepreneurship, and several accounting professional qualifications including Advanced Diploma for the Chartered Institute of Management Accountants (CIMA) and professional membership bodies such as a Fellow Member of the Chartered Governance (FCG), AIRMSA, MHRMBots and Acc Tech BICA.





## PAPER TITLE

# Student Engagement in Accounting Internships: Bridging the Gap between Academic Theory and Professional Practice – A case for Private Higher Education Institutions



## Author Profile: Ms Rumbidzai Tanya Machera

Rumbidzai Tanya Machera is a dynamic Data Analyst and Software Developer at Positive Performance, a leading firm in the Human Resources industry specialising in positive psychology and workplace well-being. She holds a Bachelor of Science (Honours) in Business Intelligence and Data Analytics (BIDA) with First-Class Honours from the Botswana Accountancy College, in partnership with the University of Sunderland (UK). A passionate advocate for technology-driven solutions, Rumbidzai actively participates in hackathons and innovation challenges by exploring new ways of solving real-world problems. In August 2024, she attended the 10th Annual GirlCode Hackathon in Botswana, where she collaborated with like-minded individuals to develop creative solutions. Beyond her technical expertise, she is deeply committed to community engagement. As a volunteer with the Diabetes Association of Botswana, she collaborates with diverse teams to promote diabetes awareness and support initiatives.

Her dedication to Sustainable Development Goal 3: Good Health and Well-being led her to organise a Diabetes Camp in July 2024, which provided education, support, and a sense of community to 200 children and adults. She believes in the power of knowledge-sharing and innovation, which she showcased at the International Conference on Electrical and Computer Engineering Researches (ICECER 2024), where she presented her research on "How Cloud Computing Technology Enhances the Performance of Small Businesses." With expertise in Python, Microsoft Excel, Power BI, and R programming, she applies data-driven insights to optimise decision-making processes and enhance business performance. Beyond data and technology, Rumbidzai is also a writer, poet, and motivational speaker, using words to inspire and empower others. She is the author of two books (A Force to Reckon and Trails of Poetry). With a unique blend of analytical thinking, storytelling, and a passion for impact, Rumbidzai continuously seeks ways to innovate, uplift, and transform communities through technology and the power of words.

### Abstract:

Student engagement in accounting internships is a critical factor in bridging the gap between academic theory and professional practice. The concept of student engagement as it relates to accounting internship programmes is contested and understood in differently but often taken for granted ways in higher education environment. As accounting students transition from classroom learning to the world of work, internships provide a unique opportunity to apply theoretical knowledge in real-world settings. This engagement is essential for deepening students' understanding of accounting principles and enhancing their practical skills. The role of internships in fostering student engagement goes beyond simply observing professional tasks; it involves active participation within a dynamic work environment. This study adopts a qualitative research paradigm, which seeks to understand the subjective experiences and meanings accounting students attach to their engagement in internship settings. This research paper used Meta - Synthesis method which involves systematically reviewing of qualitative findings from multiple qualitative studies on student engagement in accounting internships.





# **The Influence of Pedagogical Leadership on Employee Performance in a Zimbabwean University Context**

**BU IRC**11th BOTHO UNIVERSITY  
INTERNATIONAL RESEARCH  
CONFERENCE 2025

## **Author Profile: Dr. Rosemary Guvhu**

Dr. Rosemary Guvhu is a distinguished Educational Leadership and Policy Expert at Midlands State University in Zimbabwe. With a PhD in Comparative Education and Educational Management from the University of the Free State, South Africa, Dr. Guvhu specializes in the integration of information and communication technologies (ICT) in education, aiming to enhance teaching and learning experiences across diverse contexts. Since joining Midlands State University as a full-time lecturer in 2019, she has played a pivotal role in curriculum development, research coordination, and the supervision of graduate students. Her extensive academic background includes an MEd in Educational Management and a BEd in Educational Administration, equipping her with a robust foundation in educational practices. Dr. Guvhu's scholarly contributions are evident in her numerous publications in reputable journals, where she addresses crucial issues such as gender equality and the transformative impact of technology in education. She has received multiple research grants, competing for significant funding from CODESRIA for collaborative projects aimed at improving educational outcomes in Southern Africa. An active member of the Zimbabwe Council of Higher Education's Quality Control and Assurance Committee, Dr. Guvhu also serves on the editorial board of the Journal of Innovative & Inclusive Practices. Her commitment to advancing quality education is further demonstrated through her participation in international conferences, where she shares her insights on educational leadership and innovative methodologies. Through her ongoing research initiatives, Dr. Guvhu strives to leverage emerging technologies to foster inclusive and effective learning environments, making a significant impact on the educational landscape in Zimbabwe and beyond.

## **Author Profile: Mr. Tinashe Zishiri**

Tinashe Zishiri is the University Registrar of Midlands State University, Zimbabwe since 2019 to date. He holds a Masters of Business Administration in Public Management, BA General Degree, Graduate Certificate in Education, Diploma in Educational Foundations (Psychology), Diploma in Industrial Relations, Diploma in Training Management (IPMZ), Diploma in Personnel Management (IPMZ), Diploma in Salaries Administration, Certificate in Salaries Administration, and currently an in the final stages of my PhD studies in Strategic Leadership with Adventist University in Africa. Tinashe Zishiri is an experienced administrator who started his career as a teacher and then joined university administration in 2003 as a senior administrative assistant. His research interests are organisational development, strategic planning, employee relations, and training and development.

## **Author Profile: Dr. Theo Tsokota**

Theo Tsokota is a Senior Lecturer in the Department of Information and Marketing Sciences, Faculty of Business Sciences, Midlands State University (MSU), Gweru, Zimbabwe. He is a holder of a PhD in Information Technology, Nelson Mandela Metropolitan University (NMMU), South Africa (SA). His research focus on the intersection of information technology with business, education, tourism, e-services and sustainable development, particularly within the context of Zimbabwe and the broader African landscape. Through his work, he continues to make significant strides in promoting sustainable development and technological advancement in education, business and tourism, positioning himself as a key figure in these vital areas of research. His research continue to shape policies and practices in Zimbabwe and internationally.





# The Influence of Pedagogical Leadership on Employee Performance in a Zimbabwean University Context

## **Author Profile: Mr. Richard Kusakara**

At Midlands State University, Mr. Richard Kusakara has the privilege of serving as a lecturer in ICT and Computer Science, dedicated to shaping the minds of future generations. Holding a Master of Science Education in Computer Science and a Bachelor of Education (B.Ed.) in Computer Science, his academic foundation underpins his commitment to the field. His research interests are centered on the transformative potential of technology in education, with a particular emphasis on ICT integration, educational technology, and the innovative applications of Artificial Intelligence (AI). Both in his research and his classroom, his aim is to create dynamic learning experiences that foster critical thinking and empower students with the knowledge and confidence to drive positive change in their communities.

### **Keywords:**

Influence of pedagogical leadership on employee, pedagogical leadership on employee performance, heritage-based curriculum, employee performance, academic excellence, academic leaders, Zimbabwe.

### **Abstract:**

This study investigates the influence of pedagogical leadership on employee performance within a university in Zimbabwe. Grounded in an integrated framework combining Transformational Leadership Theory (TLT) and the Pedagogical Leadership Model (PLM), the paper explores how academic leaders who emphasize effective teaching and learning, provides pedagogical support, and nurtures a culture of continuous educational transformation that positively influence the employee performance across different departments. Data was collected through a self-designed structured Leadership Survey Instrument to assess perceptions of 600 randomly selected academic leaders at a state university in Zimbabwe. While adhering to research ethics. A five-point Likert scale was used to rate participants responses. Descriptive and inferential statistical analyses were conducted through SPSS version 27. Key findings uncovered a significant relationship between application of pedagogical leadership and increased employee performance academic achievement. This research provides a deeper understanding of how state universities can employ pedagogical leadership to promote educational quality and sustainable academic excellence in line with the provisions of vision 2030 sustainable development goal (SDG) 4-Quality Education and Education 5.0 Heritage- Based Curriculum-principles. Furthermore, findings suggest that pedagogical leadership, defined by staff capacity building, mentoring, best assessment and evaluation techniques as well as innovative teaching practices, is positively associated with increased employee engagement, commitment and satisfaction. Based on these findings the paper recommends that higher education institutions (HEIs) should invest in developing instructional leadership tactics university academic leaders to nurture a culture of educational transformation for achieving academic excellence.





# Artificial Intelligence-Driven Healthcare Diagnosis in SADC: Developing a Lesotho-Specific Disease Detection Model

## **Author Profile: Prof. Wole Michael Olatokun**

Wole Michael OLATOKUN is Professor of Information Science in the Department of Data and Information Science, University of Ibadan, Nigeria. He is currently affiliated with the Department of Library and Information Studies, National University of Lesotho, Lesotho. He specializes and has published extensively in the areas of Social Informatics, Knowledge Management and ICT for Development. He had previously served as Director of ARCIS, Dean, Faculty of Multidisciplinary Studies and Chairman, Board of Information Technology and Media Services at the University of Ibadan. He was Senior Research Associate at University of Johannesburg, South Africa and currently Honourary Professor, Information Studies Programme, School of Social Sciences, University of Kwazulu-Natal, South Africa. He had served as external examiner and professorial application assessor to many research institutes and universities in Nigeria, India, Botswana, Zambia, Uganda, Ghana, Malaysia and South Africa. He is a member of the Nigerian Library Association, Society for Information Science and Technology of Nigeria and Informing Science Institute, USA.

## **Author Profile\*: Ms. Mathabo Mamello Rampanyane**

### **Keywords:**

Artificial Intelligence-Driven Healthcare, AI-driven diagnostic tools, Disease Detection Model

### **Abstract:**

The advent of Artificial Intelligence (AI) in healthcare has revolutionized medical diagnostics, offering unprecedented accuracy, efficiency, and accessibility. Healthcare systems in the Southern African Development Community (SADC) region, face numerous challenges, including limited resources, high disease burden, and insufficient access to qualified medical professionals. Lesotho, a mountainous country in this region, exemplifies these challenges, particularly with diseases like tuberculosis (TB) and HIV/AIDS. The country faces significant healthcare delivery challenges, including limited access to medical facilities and a shortage of healthcare professionals. These factors contribute to high morbidity and mortality rates from preventable and treatable diseases. The advent of AI-powered diagnostic tools presents an opportunity to transform healthcare delivery and improve patient outcomes significantly. This article therefore explores the potential of AI-driven diagnostics in Lesotho, focusing on developing a model tailored to enabling early and accurate detection of diseases prevalent in the country.

Preliminary results indicate that AI-driven diagnostic tools can significantly improve the detection rates of various diseases, offering a lifeline to underserved communities. The Lesotho-specific model demonstrates high sensitivity and specificity in identifying disease markers, thereby facilitating timely interventions and reducing the burden on the healthcare system. The paper undertakes a comprehensive analysis of existing AI-driven diagnostic models, assessing their applicability and effectiveness within the context of Lesotho's healthcare system. We examine various AI techniques, including machine learning algorithms and neural networks, and their capacity to analyze complex medical data for disease detection. Emphasis is placed on the development of a robust, culturally and contextually relevant model that addresses prevalent diseases in Lesotho, such as HIV/AIDS, tuberculosis, and non-communicable diseases like hypertension and diabetes. This paper not only contributes to the academic discourse on AI in healthcare but also provides practical insights for policymakers and practitioners seeking to implement AI solutions in resource-limited settings

*\*Profile Unavailable*





# Strategies to strengthen the clinical accompaniment of nursing students through caring presence: An e-Delphi study

## Author Profile: Dr. Beauty Zulu

Dr. Beauty Zulu holds a PhD in Nursing Education from North-West University (NWU), where she has served as a lecturer in the School of Nursing since 2024. She is a seasoned nurse clinician with a specialization in Primary Health Care (PHC) Nursing. Her academic responsibilities include teaching and learning at the undergraduate level, as well as the supervision of postgraduate students. Dr. Zulu also contributes to scholarly activities as a peer reviewer, external moderator, and active member of the Caring Presence research programme, which forms part of the Quality in Nursing and Midwifery (NuMIQ) research focus area within the Faculty of Health Sciences at NWU. Her research interests centre on work-integrated learning, particularly the role of caring presence in enhancing clinical accompaniment for nursing students. She has published an article entitled "Experiences of nursing students regarding clinical placement and support in primary healthcare clinics: Strengthening resilience," and in 2024 contributed to the Presence Blog with strategies aimed at improving clinical accompaniment through caring presence. Dr. Zulu advocates for the development of supportive clinical learning environments, positing that such environments foster a holistic and caring approach to nursing education. This, she argues, leads to the cultivation of competent, confident and caring nursing professionals capable of delivering high-quality patient care, thereby contributing to improved patient outcomes and promoting a compassionate PHC approach both nationally and globally.

## Author Profile\*: Du Plessis Emmerenti

## Author Profile\*: Moagi Miriam Mmamphamo

### Abstract:

**Aim:** To validate strategies to guide nurse educators to strengthen the clinical accompaniment of nursing students through the practice of caring presence.

**Background:** Good-quality nursing education and practice involves a balance of knowledge and a holistic-caring approach to students. Quality nursing care depends on the quality of nursing education in the learning environments, and the qualitative clinical education provided. However, the absence of caring presence during the clinical accompaniment of students is a challenge globally, therefore this study provides direction and scope to improve students' work-integrated learning.

**Design:** A three-round e-Delphi consensus method.

**Methods:** A multi-phase, mixed-methods, theory-generative design was used. This study covers an online Delphi survey designed to seek consensus on the proposed strategies for improved clinical accompaniment. The first round was based on the results of two study phases: (1) empirical phase and (2) the development phase.

**Results:** Of the 22 strategies, 20 (91%) achieved  $\geq 75\%$  consensus in round 1, and 2 strategies (9%) achieved no consensus. In round 2, the 2 (9%) strategies were modified, and consensus was reached with 22 strategies clustered according to structure, process and outcome. Findings revealed that caring presence is a core-competency of nurse educators and a powerful tool for the improvement of work-integrated learning in nursing education.

**Conclusion:** Findings are contextualized in the larger debate about implementing caring and support of students during clinical accompaniment for improvement of quality nursing education nationally and globally.

**Keywords:** Delphi study, strategies, clinical accompaniment, nursing students, caring presence, clinical learning environment, clinical competence, nursing education

\*Profile Unavailable





# **EXPLORING CLASSROOM-BASED INTERVENTIONS IN ESL SYLLABUS DELIVERY FOR GRADE 4. A CASE STUDY OF A SELECTED SCHOOL IN NAMIBIA**

## ***Author Profile: Ms. Joyce Masi***

I am a lecturer in the school of education at the International University of Management. Currently a PHD candidate in Education Management and Leadership at the University of Zambia. I obtained my Masters in Education (EPMA) with Mount Kenya University in 2014. I have 27 years of experience, teaching at different levels from senior primary education to university level. I presented a Mathematic

## ***Author Profile: Ms. Tuyakula Shipanga***

Ms. Shipanga is an education graduate teacher. She has completed Bachelor Degree Honours in Senior Primary Education, majoring English and Oshindonga from International University of Management Namibia.

## ***Author Profile: Mrs. Marian Tegga Harupe***

Mrs. Harupe is a full-time lecturer in the Communication and languages department at the International University of Management and works as a part-time lecturer at Botho University. She has obtained her Master degree in English and Applied Linguistics from the Namibia University of Science and Technology .An Honours degree in Education System .Law and Management from North West University, South Africa and currently doing her PHD in Education Leadership and Management with Unicaf university (Malawi).Throughout her 16 years in education, she has worked across various academic levels, from primary and secondary schools to her current role in tertiary teaching.

## ***Abstract:***

The study explored the classroom-based interventions in the English Second Language syllabus delivery for grade 4 learners. The purpose was to explore the discrepancies between the ESL syllabus and its implementation within classrooms, with the goal of identifying obstacles to teaching and learning and recommending pragmatic teaching practices. A sample of 6 ESL teachers was purposefully selected, while 60 learners were observed during lessons. A qualitative approach employing a case study design was adopted. Data was collected from teachers through semi-structured interviews, alongside classroom observations of teaching and learning. Syllabus competencies and lesson plans were studied as well. Thematic analysis was used to interpret the data. Study results revealed a shortage of teaching and learning resources such as reading materials, syllabus-prescribed textbooks, and limited printing materials as challenges to syllabi delivery. Additionally, insufficient time for induction of teachers on syllabus implementation was also mentioned as a critical barrier for accurate basic competence interpretation. Time constraints during lessons were identified as another challenge, limiting the completion of planned activities. Occasional code-switching by teachers was observed as a strategy to allow learner comprehension. The results also showed a lack of collaboration among ESL teachers. Moreover, large class sizes further hinder teachers' abilities to provide individual attention to learners, which is an essential factor in language learning. The study also discovered that teachers sometimes omit learning competencies perceived as difficult to manage. The study recommends the provision of adequate resources for ESL classrooms, syllabus training programs for Grade 4 teachers, and the enhancement of ESL teacher collaboration.





## PAPER TITLE

# Leveraging Community-Based Ecotourism for Socio-Economic Empowerment: A Case Study of The People's Path Project in North-Western Botswana

**BU IRC**  
11th BOTHO UNIVERSITY  
INTERNATIONAL RESEARCH  
CONFERENCE 2025

## **Author Profile: Ms. Nametso Botshelo Mogomotsi**

Nametso Botshelo Mogomotsi is a Hospitality Management Lecturer-Food & Beverage at Botho University. She holds a Master of Science Degree in Hospitality and Tourism and a Degree in Hospitality Management as well as a Certificate in Vocational Education and Training. Having 8 years of experience in Tourism and Hospitality Education & Training and she has served as a lecturer at various private and public institutions of higher learning. Her research interests are Education and Training.

### **Abstract:**

This paper presents an in-depth assessment of The People's Path Project (PPP), an ecotourism-based initiative implemented in North-Western Botswana from 2021 to 2025. Aimed at integrating marginalized communities into the tourism economy, the project focused on empowering women and youth, enhancing market access, and preserving cultural heritage. The study employs a qualitative methodology using Interpretative Phenomenological Analysis (IPA) to evaluate the project's outcomes, sustainability, challenges, and lessons learned. The analysis is grounded in community empowerment theory, which offers a multidimensional lens for understanding how local populations can gain greater control over their resources, decision-making processes, and development pathways. Unlike traditional tourism models that often treat communities as passive beneficiaries, this framework emphasizes local agency, capacity building, and self-determination as central to sustainable development. The findings demonstrate that while PPP has successfully fostered community ownership, increased economic participation, and supported cultural revival, key challenges around financial management, branding cohesion, and infrastructure gaps persist. Recommendations include strengthening governance, digital capacity, and multi-stakeholder collaborations to ensure the scalability and sustainability of community-led ecotourism initiatives.





# Assessing the Impact of Socio Demographic, Clinical and Health Care Factors using BART

## **Author Profile: Dr. Younus Mohiuddin Mohammad**

Dynamic pharmaceutical professional with over six years of expertise in Portfolio Management, Market Research, and Product Strategy. Skilled in analyzing clinical and market landscapes, leading multidisciplinary teams, and crafting strategic solutions to enhance product development. Proven track record in process optimization and driving substantial revenue growth. Holds a PharmD and an MBA in International Business.

### **Abstract:**

Colon cancer remains one of the leading causes of cancer-related mortality worldwide. Identifying key prognostic factors and understanding their interactions are crucial for improving patient outcomes. In this study, Bayesian Additive Regression Trees (BART) approach for modeling cancer survival presented by, focusing on a cohort of 18,296 colon cancer patients diagnosed in England in 2012. This study examines the influence of socio-demographic factors (age, deprivation level) and clinical characteristics (tumor stage, commodities, emergency presentation) on survival probabilities over a seven-year follow-up period. The analysis indicates that emergency presentation (EP) serves as a strong predictor of lower survival, with diagnoses through emergency routes being associated with significantly worse prognoses across various cancer stages. Age at diagnosis exhibits a significant, nonlinear effect on survival, where younger individuals tend to have better outcomes, though this effect diminishes over time. Stage at diagnosis emerges as the most influential factor, particularly in the period following diagnosis, while deprivation further contributes to survival disparities, especially in advanced stages. A comparison between the COXNPH-BART model and the traditional COXPHBART model demonstrates that the former provides a substantially better fit to the data, offering deeper insights into the complex interactions among prognostic factors. The findings emphasize the importance of early detection and healthcare access in improving cancer survival, highlighting potential areas for intervention. Additionally, results suggest that tailored treatment approaches based on age and stage may enhance survival outcomes while addressing socio-economic disparities could help reduce survival inequalities. This work demonstrates the potential of BART in cancer survival modeling, offering a flexible framework to incorporate time-varying and non-linear relationships between multiple risk factors. These insights have important implications for clinical practice, policymaking, and future research into cancer survival disparities.





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