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Internationalisation at Home: The Cases of the Universities of Makerere and Nairobi

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Abstract

This article presents a comparative analysis of internationalisation efforts at Makerere University in Uganda and the University of Nairobi in Kenya, with a focus on internationalisation at home (IaH). It examines various aspects of IaH, including institutional commitment, policies, leadership, curriculum, funding, student enrolment and collaborative networks. Motivated by concerns about the limited internationalisation initiatives in East African universities, these universities were selected as case studies due to their historical ties and flagship status in their countries. Utilising documentary analysis and literature review methodologies, data were collected from policy documents, statistical records and updates from the universities' websites and relevant educational bodies. The study found that both institutions have made notable progress in internationalising their environments through IaH, although the extent varies. The findings reveal comparable efforts but highlight the need for enhanced institutional commitment, improved policies, strengthened leadership, innovative curricula, optimal funding, diverse enrolment strategies and robust partnerships to advance IaH and overall internationalisation in East African higher education.

Keywords: internationalisation at home, East African universities, comparative analysis, higher education, institutional commitment

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Résumé
Cet article présente une analyse comparative des efforts d'internationalisation de l'Université de Makerere en Ouganda et de l'Université de Nairobi au Kenya, en mettant l'accent sur l'Internationalisation at Home (IaH). Il examine divers aspects de l'IaH, notamment l'engagement institutionnel, les politiques, le leadership, le programme d'études, le financement, l'inscription des étudiants et les réseaux de collaboration. Motivées par les préoccupations concernant les initiatives d'internationalisation limitées dans les universités d'Afrique de l'Est, ces universités ont été sélectionnées comme études de cas en raison de leurs liens historiques et de leur statut de fleuron dans leur pays. En utilisant des méthodologies d'analyse documentaire et de revue de la littérature, les données ont été collectées à partir de documents politiques, de registres statistiques et de mises à jour des sites web des universités, ainsi que des organismes éducatifs pertinents. L'étude a révélé que les deux établissements ont réalisé des progrès notables dans l'internationalisation de leur environnement par le biais de l'IaH, même si l'ampleur de ces progrès varie. Les résultats révèlent des efforts comparables, mais soulignent la nécessité d'un engagement institutionnel accru, de politiques améliorées, d'un leadership renforcé, de programmes d'études novateurs, d'un financement optimal, de stratégies d'inscription diversifiées et de partenariats solides pour faire progresser l'IaH et l'internationalisation globale de l'enseignement supérieur en Afrique de l'Est.

Mots clés : internationalisation à domicile, universités d'Afrique de l'Est, analyse comparative, enseignement supérieur, engagement institutionnel

Introduction

In their quest for global recognition, universities strive to excel both nationally and regionally (Ayebare and Onen, 2021). As institutions increasingly recognise that global engagement enhances education quality, research output and societal contributions, the extent of internationalisation has become a critical determinant of a university's prestige (Hewitt, 2021). However, it should not be seen as an end in itself but as a strategic tool to foster collaborative knowledge production, technology transfer, and innovation in the global knowledge society (de Wit and Altbach, 2020; Teferra, 2019). While many regions have strategically embraced internationalisation, African universities have often approached it in an ad-hoc manner, treating it as a marginalised activity with limited planning and support (de Wit, 2011; Jowi, 2009).

Despite these challenges, African universities such as Makerere University (Mak) in Uganda and the University of Nairobi (UoN) in Kenya have increasingly recognised the importance of internationalisation. These institutions aim to capitalise on internationalisation opportunities while addressing associated challenges (Bisaso and Nakamanya, 2020; Ayebare and Onen, 2021). In particular, the concept of internationalisation at home (IaH) has gained traction as a vital strategy to enhance global engagement within domestic educational environments. Internationalisation at home focuses on integrating international and inter-cultural dimensions into the curriculum and campus life, promoting a globally-oriented education for all students, regardless of mobility (de Wit and Altbach, 2020; Moshtari and Safarpour, 2023).

This comparative study explored the extent of IaH at Mak and the UoN, examining how these universities implement internationalisation strategies, particularly in terms of institutional commitment, policies, leadership, curriculum development, and student engagement.

Historically, internationalisation in African higher education has been influenced by colonial legacies that prioritise Western paradigms, often at the expense of local knowledge systems (Teferra, 2019; Alemu, 2019). This has created challenges in asserting an independent international presence while embracing African epistemologies (Ndlovu and Sabelo, 2017). Given these dynamics, African universities must approach internationalisation in ways that reflect both global trends and local contexts. Internationalisation at home provides a critical opportunity to do so by embedding international perspectives into the curriculum while promoting Africanisation, thus fostering a balance between global engagement and affirmation of African identities.

Drawing on the American Council on Education's (ACE) framework, this study compared Mak and the UoN's internationalisation. The ACE framework calls for a comprehensive approach to internationalisation, integrating policies, programmes and individuals across the institution to create globally connected universities (American Council on Education, 2023). It served as a guiding structure to analyse how Mak and the UoN implement IaH and broader internationalisation strategies, ensuring that internationalisation is embedded throughout the institution rather than being confined to specific offices or disciplines.

This study addressed the following research questions with a particular focus on IaH: (i) How do Mak and the UoN demonstrate institutional commitment to internationalisation, particularly IaH? (ii) What policies support IaH? (iii) How are leadership and organisational structures aligned with IaH? (iv) How is the curriculum internationalised, particularly within the context of IaH? (v) What funding mechanisms are in place to support IaH initiatives? (vi) How do student enrolment strategies incorporate IaH? and (vii) How do collaborative partnerships and networks at Mak and the UoN enhance IaH efforts?

By addressing these questions, this study aimed to contribute to the on-going debate on Africanisation and internationalisation in African higher education, highlighting the role of IaH in creating inclusive, globally engaged universities that are responsive to both local and global challenges.

Literature Review

A university's commitment to internationalisation is a pivotal factor in achieving global success, calling for its explicit prioritisation in strategic plans (American Council on Education, 2023). As evidenced by the inclusion of internationalisation in its mission statements, Mak exemplifies this commitment (Ayebare and Onen, 2021). It is reflected in Mak's core values and cross-cutting approach, which include attracting international students, integrating international perspectives into teaching and learning, fostering collaborative research, and offering joint degree programmes (Bisaso and Nakamanya, 2020). Such strategic alignment underscores Mak's proactive stance towards IaH, aligning

with its mission to be a leading institution for academic excellence and innovation in Africa.

Policies play a crucial role in shaping universities' internationalisation trajectory. In developed regions such as Europe, policy frameworks like the Bologna Process have been instrumental in promoting multi-cultural diversity on campuses (European University Association, 2018; Muyaka et al., 2020). Although the UoN has adopted policies that support IaH, including those governing partnerships, admission of international students, quality assurance and intellectual property (Kathae, 2015), many African universities, including Mak and the UoN, lack specific, concise policy frameworks for internationalisation (Moshtari and Safarpour, 2023).

Effective leadership and organisational structures are essential to integrate internationalisation efforts within universities. Nuagaba (2018) highlights top leadership's influence on internal university dynamics, suggesting the need for organisational restructuring to accommodate international students. The Centre for International Programmes and Links (CIPL) at the UoN is dedicated to integrating internationalisation. However, its specific contribution to attracting and supporting international students requires further exploration (Kathae, 2015). Similarly, Mak's International Relations Office (IRO) focuses on internationalisation processes; however, a more detailed analysis is needed to understand its impact on the university's internationalisation efforts (Bisaso and Nakamanya, 2020).

The internationalisation of curricula in East Africa has historical roots in colonial higher education systems, which, despite limitations, laid the foundation for future developments (Bisaso and Nakamanya, 2020; Clifford and Montgomery, 2017). Internationalisation of the curriculum (IoC) involves incorporating international, inter-cultural, and global dimensions into educational content, learning outcomes, assessment, teaching methods, and support services (Leask, 2015; Beelen and Jones, 2015). While both the UoN and Mak are currently reviewing their programmes to align with international needs, specific details remain unclear (Kathae, 2015; Ayebare and Kaweesi, 2022).

Funding and support are vital for successful internationalisation. For example, the European Higher Education Area has established an "Internationalisation Agency" to manage scholarship programmes (Austrian Federal Ministry of Science and Research, 2009). In contrast, many universities in Uganda and Kenya rely heavily on government funding, which often does not suffice to support comprehensive internationalisation initiatives (Moshtari and Safarpour, 2023; Rwendeire et al., 2017). While Mak's affordable fees and low cost of living have attracted international students, the lack of clear governmental support for international student sponsorship raises concerns about the sustainability of these efforts (Tadesse and Doevenspeck, 2015).

The enrolment of international students makes a significant contribution to campus diversity and offers local students exposure to global perspectives. However, enrolment trends in Uganda and Kenya indicate a decline in international student numbers, raising concerns about the effectiveness of strategies to attract them (Ayebare and Kaweesi, 2022; Othoo and Sika, 2022; Nuagaba, 2018). On-going questions have been raised with regard to international students' low enrolment in specific disciplines, such as PhD programmes and the potential under-utilisation of existing structures to support these students (Muyaka, 2019; Kathae, 2015).

Partnerships and networks are essential to foster global collaboration and leverage diverse resources for effective internationalisation (American Council on Education, 2023). The UoN has established various partnerships. Mak has signed numerous Memoranda of Understanding (MoUs) for research collaboration (Kathae, 2015; Bisaso and Nakamanya, 2020). However, there is a need for more detailed information on the specific partners and how these partnerships translate into tangible internationalisation outcomes for both institutions.

Methodology

This study employed a qualitative methodology using a dual case study design to examine the intent and practice of IaH within Mak and the UoN. The dual case study approach was selected to provide a comprehensive analysis of these institutions, incorporating a literature review and document analysis (Busetto et al., 2020). The choice of Mak and the UoN was justified by their prominent roles in higher education within their respective countries and their active involvement in internationalisation efforts, making them ideal subjects for this research. Both were purposefully selected due to their historical significance as founding colleges of the University of East Africa and their on-going prominence as leading universities in Uganda and Kenya, respectively (Bisaso and Nakamanya, 2020). They are also regarded as crucial centres of excellence in the revitalisation of the East African Community (Bisaso, 2017).

The comparison of the two universities was structured around several critical parameters: institutional commitment, policies, leadership and structure, curriculum, funding and support, student enrolment and partnerships and networks. These were drawn from a thorough review of the empirical literature on higher education internationalisation and were further refined using the Comprehensive Internationalisation Model (American Council on Education, 2023). The data sources included strategic plans, policy documents, abstracts, reports, newsletters and statistical data available in institutional databases (Busetto et al., 2020).

The use of university websites and institutional publications as primary data sources is justified by their authoritative nature and a direct reflection of the universities' official position and activities. University websites serve as official communication channels and repositories for strategic documents, policy statements, and updates, thereby providing accurate, current information about institutional priorities and activities. These sources are precious in contexts where direct access to internal data may be restricted, allowing researchers to gain insights into the universities' internationalisation strategies and achievements.

Moreover, reliance on qualitative data such as policy documents and institutional publications does not preclude the ability to draw meaningful conclusions. The qualitative analysis enables a nuanced understanding of institutional contexts. It can reveal underlying motivations, strategies, and challenges that may not be captured by quantitative data alone. Careful triangulation of information from multiple sources mitigated the limitations associated with the availability of quantitative data,

ensuring a comprehensive analysis of internationalisation efforts at Mak and the UoN.

The data were systematically analysed to determine the two universities' internationalisation status. This process involved identifying existing practices, highlighting gaps, and proposing recommendations to enhance internationalisation efforts. While potential limitations such as the availability and comprehensiveness of data on university websites and the scarcity of studies in specific thematic areas are acknowledged, these did not undermine the study's validity. Instead, they highlighted the need for more robust data collection and reporting mechanisms within the institutions.

In conclusion, despite its inherent limitations, the research makes a valuable contribution to understanding internationalisation at Mak and the UoN, laying a foundation for further inquiry and policy development in the region (Busetto et al., 2020; Bisaso and Nakamanya, 2020; Bisaso, 2017; American Council on Education, 2023).

Results

Research Question 1

The first research question was, "How internationalised is Mak compared to the UoN in terms of institutional commitment?" Institutional policy documents, website records and updates were analysed to obtain answers to this question, and the results are summarised in Table 1.

Table 1: Differences/Similarities in Internationalisation in Terms of Institutional Commitment

No.	Document	Parameter	Makerere University	University of Nairobi
1.	Strategic Plan	Strategic Theme	Mak explicitly anchors its strategic theme on internationalisation, emphasising its commitment to becoming a global knowledge hub in the heart of Africa (Makerere Universiy, 2023a).	The UoN articulates global aspirations in its vision statement. It aspires to be a world-class university committed to scholarly excellence and competition with other global institutions (University of Nairobi, 2023a).
		Vision and Mission	The vision and mission of Mak reflect a dedication to knowledge generation for societal transformation and a commitment to providing transformative and innovative education that is responsive to global needs (Makerere University, 2023a).	The vision and mission statements of the UoN also signify the institution's commitment to internationalisation, as it aspires to be a world-class university dedicated to scholarly excellence that demonstrates commitment to global standards (University of Nairobi, 2023a).
		Core Values	Mak's core values, professionalism, and inclusivity underscore its commitment to internationalisation, emphasising competence, diversity and a global perspective (Makerere University, 2023b).	While the UoN's core values do not explicitly include internationalisation, specific strategies within its thematic areas reflect a commitment to global engagement (University of Nairobi, 2023b).
		Strategic Goals	All four goals of Mak's strategic plan unequivocally address internationalisation, indicating a clear commitment to achieving academic excellence on the continent and globally (Makerere University, 2023a).	Strategies within the UoN's strategic plan themes, such as 1.7, 2.1, 4.2.4, and 5.3, include mention of internationalisation, providing evidence of the university's commitment to global initiatives (University of Nairobi, 2023a).
2.	Website	Leadership Commitment	Mak leaders express aspirations for collaboration with eminent global institutions and address complex national, regional and global issues, demonstrating collective commitment to internationalisation (Makerere University, 2023a).	The UoN's leaders also express aspirations for collaboration with eminent global institutions and address complex national, regional and global issues, demonstrating collective commitment to internationalisation (University of Nairobi, 2023a).

Table 1 compares institutional commitment to internationalisation at Mak and the UoN, highlighting their different approaches to becoming world-class universities within the African context. African universities face unique challenges in this quest, including the legacy of colonialism, resource constraints, and the need to balance global engagement with

local relevance. These shape how universities like Mak and the UoN interpret and implement internationalisation, making it crucial to consider their context-specific strategies (Makerere University, 2023a; University of Nairobi, 2023a).

Makerere University's strategic theme is anchored in internationalisation, positioning the university as a global knowledge hub rooted in Africa. This commitment is reflected across its strategic goals, core values, and leadership vision. Its approach aligns with the Africanisation discourse, which advocates for African universities to address local challenges while engaging with global academic standards. By emphasising internationalisation within an African framework, Mak seeks to redefine what it means to be a world-class university—not by replicating Western models but by building a unique global identity grounded in African realities and priorities (Makerere University, 2023a; 2023b).

In contrast, the UoN articulates its global aspirations through the vision of becoming a world-class institution that competes with global peers. This more traditional approach reflects Western standards of academic excellence, focusing on global competition. While the UoN's strategic goals and thematic strategies include internationalisation efforts, these are less explicit than those of Mak, showing more conventional alignment with global academic trends rather than a focused effort to contextualise internationalisation within Africa's unique challenges (University of Nairobi, 2023a; 2023b). The UoN's internationalisation efforts could benefit from more explicit integration of local goals alongside its global aspirations.

The comparison of Mak and the UoN underscores the broader challenges and opportunities confronting African universities striving to be world-class institutions. This quest requires them to address resource limitations, decolonise their curricula and balance global engagement with local relevance. Makerere University's explicit, focused approach, grounded in inclusivity, diversity and a global perspective within an African context, demonstrates that being world-class involves creating an African model of excellence rather than mimicking Western universities (Makerere University, 2023a). While the UoN shows a solid commitment to internationalisation, a more precise articulation of how its global aspirations align with local relevance and Africanisation could strengthen its position in redefining what it means to be a world-class African university (University of Nairobi, 2023a).

Research Question 2

The second research question was, "How internationalised is Mak compared to the UoN in terms of institutional policies?" The findings revealed that both institutions demonstrate commitment to fostering a diverse and globally engaged academic environment. The UoN articulates its commitment to internationalisation through specific policies and guidelines. Its Information for International Students manual is a comprehensive guide for international students that outlines essential information and expectations (University of Nairobi, 2023b). The university's website policy also aims to improve visibility locally and internationally by creating a solid brand presence (University of Nairobi, 2012). The open access policy emphasises the long-term preservation of the university's research output, increased visibility, and collaboration with the global research community (University of Nairobi, 2021).

Several Mak policies recognise diversity. The institution's ICT strategic plan (2020-2030), the policy on establishing research entities, the joint award policy, and the quality assurance policy framework all acknowledge and value diversity within the university (Makerere University, 2018). Notably, the quality assurance policy framework highlights the importance of national and international bench-marking for quality assurance, aligning the university with comparable research-led institutions globally (Makerere University, 2021).

Research Question 3

The third research question was, "How internationalised is Makerere compared to the UoN in terms of leadership and structure?" The findings showed that both have established dedicated offices and structures to support and facilitate the integration of international students. At the UoN, the International Students Office serves as a central hub for international students. It offers comprehensive information to assist international students in settling in, including guidance on visa

acquisition, safe accommodation, and a list of private and university hostels (University of Nairobi, 2023c). The information manual for international students outlines structural services such as guidance and counselling, emphasising the university's commitment to providing a supportive environment (University of Nairobi, 2023c).

Similarly, Mak demonstrates a structured approach to internationalisation through its Guild Government ministries. The Ministry of National and Pan-African Affairs and its committee are tasked with fostering relationships with African student organisations, while the Ministry of International Affairs and its committee focus on such relationships outside Africa. In addition, Mak has an International Office dedicated to various aspects of international student affairs. Its officers are responsible for admission, welfare, and university collaborations for international students. It also conducts separate orientations for international students, emphasising the importance of a tailored approach to their integration (Makerere University, 2023b).

Research Question 4

This fourth research question was, "How internationalised is Mak compared to the UoN in terms of curriculum?" The findings revealed that both universities are actively working to integrate elements of global awareness and intercultural competence into their curricula. At the UoN, there is a strong focus on cultivating human capital to address global challenges, mainly through postgraduate fellowships. Although the specific target of these fellowships is not clear, the university's commitment to preparing students for global engagement is evident (University of Nairobi, 2023b). The UoN primarily operates in an English-language environment, reflecting its adherence to international norms of communication and instruction.

The UoN's curriculum emphasises comparative studies, which are critical in nurturing students' ability to participate in regional and global conversations. Programmes such as the Master of Education in Comparative and International Education and History of Education aim to provide students with the tools to understand educational systems and practices within both regional and global contexts (University of Nairobi, 2023d).

This contributes to the development of globally competent graduates who are well-prepared to address international educational challenges.

In addition to comparative studies, the UoN's Department of Languages introduces intercultural dimensions into the curriculum through a range of language programmes. Courses in Arabic Studies, English Linguistics, German Literacy Studies, Intercultural German Studies and Korean Linguistics illustrate its efforts to offer a diverse linguistic foundation that supports its internationalisation goals (University of Nairobi, 2023d). However, the extent to which these language programmes influence the broader university culture and contribute to a more holistic internationalisation strategy could warrant further investigation. The reach of these offerings throughout the university and their impact on students' intercultural competence could be areas for future study.

Makerere University also demonstrates a solid commitment to internationalisation through its curriculum by offering a diverse range of language programmes and global engagement initiatives. The Department of European and Oriental Languages offers programmes in Arabic, German, French, Chinese and Kiswahili, which are integrated into several academic disciplines, including Tourism, Agribusiness, Business Administration and Social Research (Makerere University, 2023b). This diversity of language offerings underscores Mak's dedication to equipping students with intercultural competence, ensuring that they are well-prepared for global interaction in various professional fields.

Beyond language programmes, Mak actively engages in global exchange initiatives, particularly those aimed at enhancing inclusivity and intercultural understanding. For example, the university's participation in the Talloires Network of Engaged Universities facilitates exchange programmes for students with disabilities. These programmes connect participants from 27 countries across Africa, South Asia, and the US, reflecting Mak's commitment to promoting a global perspective while ensuring that its internationalisation efforts are inclusive (Makerere University, 2023b). This focus on inclusive global engagement is a distinguishing feature of Mak's approach to curriculum internationalisation.

In comparing the two universities, it is clear that the UoN places distinct emphasis on comparative studies within its curriculum. In contrast, Mak integrates a broader range of foreign languages and places a strong emphasis on global exchange programmes. However, the true impact of these international dimensions on local students' global competence requires further exploration. An assessment of how effectively these initiatives reach students across the entire university and contribute to their global awareness would provide valuable insights. Both universities are making significant strides in shaping curricula that prepare students for a globalised world. However, on-going evaluation of the practical outcomes of these efforts will be crucial to ensure that they continue to meet the evolving demands of internationalisation.

Research Question 5

The fifth research question was, "How internationalised is Mak compared to the UoN in terms of funding?" Institutional policy documents, website records and updates were analysed to answer this question.

Both Mak and the UoN demonstrate concerted efforts to attract students from various African countries, reflecting a shared commitment to regional integration and internationalisation. However, the scale, accessibility, and diversity of funding opportunities differ. For example, Mak has implemented scholarship programmes like the MasterCard Foundation Scholarship and the Intra-Africa Academic Mobility Scholarship Program (African Union, 2023) with the aim of diversifying its student population. These provide opportunities for African students to study at Mak, emphasising the university's focus on African students. However, the limited number of fellowships, such as those offered through the East African Network of Bioinformatics Training (EANBiT), highlights challenges in expanding access to students across the continent.

In contrast, most of Mak's scholarships target opportunities in developed countries rather than in Africa. This Western-oriented focus may limit the university's ability to draw more international students to study at Mak. Furthermore, Mak's fee structure presents a substantial barrier, as international students are required to pay nearly double what local

and East African students pay, which could deter potential international applicants (Makerere University, 2023a). This raises questions about the inclusivity of Mak's efforts, particularly for students from lower-income African countries.

The UoN offers a more diverse array of scholarships, including the Aga Khan Foundation Scholarship, Mitsubishi Scholarship and UPEACE. These support not only Kenyan students studying at home but also African students wishing to study in Kenya (University of Nairobi, 2023b). This broader spectrum of funding demonstrates the UoN's more substantial commitment to both inbound and outbound student mobility within Africa. Kenya's Ministry of Education also provides scholarships for Kenyan students to study abroad (Kenya Ministry of Education, 2023). These initiatives reinforce the UoN's role in regional educational integration and its efforts to create a more interconnected African student network.

The fee structure at UoN also reflects a more balanced approach to internationalisation. International students are charged only 20% more than local students, a much smaller difference than at Mak (University of Nairobi, 2022). This makes the UoN a more financially accessible option for international students, particularly those from neighbouring African countries. The university's ability to offer competitive fees alongside a range of scholarship opportunities enhances its attractiveness to a diverse global student body, positioning it as a more inclusive institution in terms of funding and accessibility.

In summary, both Mak and the UoN demonstrate a firm commitment to internationalisation through their funding mechanisms. However, the UoN's more comprehensive range of scholarships, combined with a more moderate fee structure for international students, suggests that it may offer a more conducive environment to attract a diverse global student population. While Mak's scholarship initiatives target African students, the significant fee disparities and Western-oriented scholarship focus highlight areas where the university could enhance its internationalisation strategy to better align with regional priorities.

Research Question 6

The sixth research question was, "How internationalised is Mak compared to the UoN in terms of student enrolment?" Both universities have made efforts to attract diverse student populations. However, the data points to varied perspectives, especially when distinguishing between international and regional students. These differences provide insights into the universities' internationalisation strategies and the effectiveness of their enrolment policies. Understanding the specific dynamics of student enrolment at these universities requires a closer examination of regional influences and challenges unique to the African context.

Kenya's 2017/2018 University Statistics Report highlights a 13.59% increase in international student enrolment, growing from 4 730 to 5 373 students across the country's universities (Kenya National Bureau of Statistics, 2018). This reflects a broader trend of regional integration and mobility within East Africa, with many of these students coming from neighbouring countries. The Standard reported that Kenyan universities, including the UoN, enrolled 6 202 international students two years ago, with the UoN accounting for a substantial share of 1 300 (The Standard, 2020). Despite their classification as international students, many of these students are from East African countries, indicating solid regional ties and the UoN's role in fostering regional collaboration and cultural exchange.

Enrolment of students from more than 40 countries contributes to the UoN's culturally diverse campus environment, enriching students' experiences and promoting global citizenship (University of Nairobi, 2023a). This diversity underscores its efforts to create an inclusive and internationally recognised institution. However, the data suggests that regional students from East Africa make up a large portion of the international student body, which may limit the extent of cross-continental or global diversity. While this regional focus strengthens East African educational cooperation, it raises questions about how far the UoN's internationalisation efforts extend beyond the region.

In Uganda, reports show a general decline in international student enrolment, from 20 324 in 2018/2019 to 19 981 in 2019/2020 across

all its universities (Makerere University, 2023a). If this trend is mirrored at Mak, it could pose challenges to the university's internationalisation efforts and reduce opportunities for intercultural interaction between international and local students. Various sources provide conflicting figures for Mak's international student population, with QS Top Universities citing 3 500 international students from more than ten countries (QS Top Universities, 2023), while Times Higher Education suggests 2 694 international students out of 34 651 constituting 7.8% of the total student body (Times Higher Education, 2023). Despite these differences and similar to the situation at the UoN, the majority of these international students are regional, primarily from neighbouring African countries.

While Mak shows commitment to internationalisation through the enrolment of international students, the decline in numbers and limited cross-continental diversity present challenges. Reliance on regional students highlights a significant aspect of Mak's internationalisation strategy, which focuses more on intra-African student mobility than on attracting students from other continents. While vital for strengthening East African educational ties, this limits the broader intercultural experiences that a more globally diverse student body could offer.

In conclusion, both Mak and the UoN are actively pursuing internationalisation through student enrolment, mainly focusing on attracting regional students from East Africa. The UoN shows steady growth in international student enrolment and greater diversity, reflecting its efforts to foster cultural appreciation and global citizenship. However, Mak faces challenges in maintaining its international student numbers and expanding beyond regional diversity. Both universities illustrate the complexities of internationalisation in an African context, where regional integration plays a crucial role in shaping student mobility and enrolment patterns.

Research Question 7

The last research question was, "How internationalised is Mak compared to the UoN in terms of partnerships and networks?" Both universities have forged collaborations with local, regional and international

institutions. The UoN's Research blog states that it has partnerships with organisations like the African Population and Health Research Centre (APHRC), Consortium for Advanced Research Training in Africa (CARTA), and International Business Machines (IBM), among others (University of Nairobi Research Blog, 2023). These contribute to the UoN's visibility on the global stage through collaborative research efforts to address international challenges. Local partnerships could also indirectly support internationalisation efforts by enhancing the university's overall capacity and influence (Othoo and Sika, 2022).

Makerere University boasts a rich array of partnerships and collaborators, which is evident on its website (Makerere University, 2023a). Each of its nine colleges and the School of Law has targeted partners. The university collaborates with institutions such as the African Research Universities Alliance (ARUA), African Institute for Capacity Development (AICAD), CARTA, the University of Peradeniya and the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM) (Bisaso and Nakamanya, 2020). Furthermore, Mak hosts unique international centres, including the Food Technology and Business Incubation Center (FTBIC), the Centre for Research in Energy and Energy Conservation (CREEC) and the Centre for Tobacco Control in Africa (CTCA), among others. These attract students and staff from diverse parts of the world for research and learning purposes, contributing significantly to Mak's internationalisation efforts (Makerere University, 2023b).

Discussion

The study's findings shed light on Mak and the UoN's internationalisation efforts, revealing similarities and disparities. Commitment to internationalisation is evident in both universities' strategic plans, with Mak demonstrating a more pronounced intention throughout its plan. At the same time, the UoN exhibits varied commitment across different sections of its institutional framework (Bisaso and Nakamanya, 2020). This aligns with previous studies, including that of Kathae (2015), which indicated that both universities have adopted internationalisation policies.

Both institutions have established offices and appointed office bearers to handle international matters, aligning with the coordination role

identified by Nuagaba (2018) and Bisaso and Nakamanya (2020). However, as recognised by Mak, their primary focus on admission and the welfare of international students calls for a more comprehensive approach that encompasses collaboration (Nuagaba, 2018; Bisaso and Nakamanya, 2020).

International and inter-cultural dimensions are incorporated into the curricula of both universities, reflecting the commitment to global education. The study concurs with Clifford and Montgomery (2017), who emphasised the importance of integrating international, inter-cultural and global dimensions into teaching methods, content and assessment tasks. However, the need for increased effort in publishing engagements that bring the international community to local spaces, both physically and virtually, is highlighted, aligning with the recommendations of de Wit (2011) and Muyaka (2019).

The study revealed that both Mak and the UoN lack published internal funding options for international students and research collaboration, relying on higher fees for international students. This is consistent with the challenges faced by African universities, as noted by Moshtari and Safarpour (2023). The disparities in additional fees for different courses at Mak suggest the need for a more standardised, equitable approach to avoid deterring prospective international students. The lack of published funding opportunities from the ministries of education calls for a review of funding models that can facilitate internationalisation.

The demographic analysis indicated higher enrolment of international students in Uganda than in Kenya, with a significant share in public universities. This aligns with previous studies by Kathae (2015), Nuagaba (2018), Bisaso and Nakamanya (2020) and Othoo and Sika (2022), emphasising the dominance of East African students and higher enrolment of international students in private universities. There is a need for further investigation of the reasons behind Uganda's success in attracting more international students despite enrolling a smaller number of students overall.

Both universities boast networks of partners and collaborators, with Mak hosting unique programmes and participating in initiatives like

HEED-Africa (HEED-Africa, 2023). The study suggests that the UoN could learn lessons from Mak's commitment to internationalisation, which is evident in its strategic plan (Bisaso and Nakamanya, 2020). At the same time, Mak could reconsider its additional fees for international students (Moshtari and Safarpour, 2023). Formulating comprehensive policies on internationalisation, strengthening international offices, and creating online systems to publicise their internationalisation status are crucial steps for both universities (Nuagaba, 2018; Bisaso and Nakamanya, 2020). The study calls for more in-depth empirical research on declining rates of inward mobility of international students, the flourishing of private universities and funding models that favour international students (Moshtari and Safarpour, 2023; Muyaka, 2019).

Conclusion

Based on the above findings, it is concluded that both Mak and the UoN have made strides in internationalisation across multiple facets, albeit to varying degrees. Both demonstrate commitment to internationalisation within their strategic plans, although disparities exist in the depth of this commitment. While establishing offices to manage international affairs aligns with established practices, the study underscores a noticeable focus on admission and welfare, suggesting the need for more extensive emphasis on collaboration, as championed by Mak. Integrating international and inter-cultural dimensions into curricula showcases dedication to global education. Nevertheless, the study accentuates the need for intensified efforts to facilitate engagements that bring the international community into local spaces, which is in line with recommendations for cultivating multi-cultural experiences and global perspectives among local students.

The study revealed insufficient funding options for international students and research collaboration, indicating heavy reliance on higher fees. The additional fees charged by Mak raise equity concerns, emphasising the need for a standardised approach. The lack of published funding opportunities from ministries of education underscores the need to re-evaluate funding models so that they can more effectively facilitate internationalisation. The demographic analysis exposed higher enrolment of international students in Uganda compared to

Kenya, with public universities playing a significant role. Further investigation is proposed to understand Uganda's success in attracting more international students despite enrolling fewer overall students. Both universities have networks of partners and collaborators, with Mak hosting unique programmes and participating in initiatives like HEED-Africa, which offer opportunities for reciprocal learning.

Based on the findings, it is recommended that the UoN glean insights from Mak's robust commitment to IaH. At the same time, Mak could benefit from re-evaluating its fee structure for international students. Formulating comprehensive policies, fortifying international offices and operating online systems to publicise their internationalisation status is pivotal for both universities. More in-depth empirical research is required to grasp the reasons for dwindling inward mobility and the flourishing of private universities, contributing to the on-going discourse on effective internationalisation in higher education.

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Perceptions of the Appropriateness of the Procedures to Develop Quality Assurance Mechanisms to Foster Tanzanian Universities' Compliance

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Abstract

Contemporary external and internal quality assurance structures employ participatory procedures to design quality assurance mechanisms that promote universities' compliance. Tanzania is among the countries that have adopted such measures to promote key stakeholders' acceptance and implementation. This study explored Tanzanian stakeholders' perceptions of the appropriateness of the procedures that guide the development of national and institutional quality assurance mechanisms to foster universities' compliance. Data were gathered from 46 participants across four universities by means of interviews, focus group discussions and documentary review. The data were analysed using content analysis. The analysis revealed that some key stakeholders did not make sufficient input into existing quality assurance mechanisms, resulting in non-compliance among universities, academics and students. Recommendations are offered to increase key stakeholders' involvement and thus enhance compliance.

Key words: participatory procedures, quality assurance mechanisms, university compliance, Tanzania

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Résumé

Les structures contemporaines d'assurance qualité externe et interne utilisent des procédures participatives pour concevoir des mécanismes d'assurance qualité visant à promouvoir la conformité des universités. La Tanzanie fait partie des pays qui ont adopté de telles mesures pour promouvoir l'acceptation et la mise en œuvre par les principales parties prenantes. Cette étude a exploré les perceptions des parties prenantes tanzaniennes quant à l'adéquation des procédures qui guident le développement des mécanismes nationaux et institutionnels d'assurance qualité afin de favoriser la conformité des universités. Les données ont été recueillies auprès de 46 participants de quatre universités au moyen d'entretiens, de discussions de groupe et d'une analyse documentaire. Elles ont été analysées à l'aide d'une analyse de contenu, laquelle a révélé que certains acteurs clés n'ont pas suffisamment contribué aux procédures existantes, ce qui a entraîné la non-conformité des universités, des universitaires et des étudiants. Des recommandations sont formulées pour accroître l'implication des principales parties prenantes et améliorer ainsi la conformité.

Mots clés : procédures participatives, mécanismes d'assurance qualité, conformité des universités, Tanzanie

Introduction

Globally, external (national and international) and internal (individual universities) quality assurance (QA) structures for universities have made concerted efforts to achieve compliance with external and internal QA mechanisms and thus improve the quality of university education and graduates' capabilities (Mgaiwa, 2018; Shabani et al., 2014). In developing and revising QA mechanisms, the primary focus has been promotion of key stakeholders' views, ownership and acceptance of the mechanisms (Inter-University Council for East Africa [IUCEA], 2016) as this promotes compliance (see Alzafari and Ursin, 2019; Ansah, 2015; Mrema et al., 2024).

While the terms QA mechanisms or standards for universities have been used interchangeably in some contexts, the former can be likened to a parent and the latter to a child. University QA mechanisms are the

set of standards, procedures, policies, guidelines, measures, strategies, processes and methods to maintain and improve the excellence of higher education (HE) and its graduates, while a QA standard is a subcategory of QA mechanisms that sets the QA requirements for HE (Asiyai, 2022; IUCEA, 2015; Mrema et al., 2023a, 2023b). Thus, QA standards which guide input (e.g., entry criteria for academics and students or the academic-students ratio), process and output are enforced by several QA methods or processes (e.g., monitoring and evaluation, self-assessment and a quality audit) to promote standardisation of HE practices (Forde et al., 2016).

University QA mechanisms are designed by QA agencies and are expected to be complied with by all stakeholders (i.e., top university administrators, academics, students and graduates). However, empirical studies show that some universities, particularly in Africa, have paid little heed to existing QA mechanisms, contributing to the ongoing deterioration of HE quality (Alzafari and Kratzer, 2019; Asiyai, 2022; Machumu and Kisanga, 2014; Pham and Nguyen, 2020). Only 11 and 33 African universities are among the top 1 000 world universities listed in the 2023 Quacquarelli Symonds (QS) and the Times Higher Education (THE) rankings, respectively (THE, 2023; Top Universities, 2023). This implies that the majority of African universities are not adhering to QA standards (along with input, process and output, which are among the THE and QS ranking criteria) that are recognised internationally.

Research has shown that many universities in East Africa (Uganda, Rwanda, Kenya and South Sudan) do not comply with QA mechanisms. For instance, Kuyok (2017), Neema-Abooki (2016), Odhiambo (2014) and Sikubwabo et al. (2020) cite high academic-students and physical resources-students (i.e., books, computers and study facilities) ratios, traditional pedagogies, academics moonlighting, academic dishonesty among students, admission of unqualified students and unaccredited universities and academic programmes, as well as unmarketable academic programmes in these countries. Similar cases have been observed by QA agencies conducting quality audits at universities.

In response, national QA agencies have taken punitive measures such as suspending, closing and deregistering universities or academic

programmes found to be non-compliant (Mrema et al., 2023b; National Council for Higher Education [NCHE], 2023). Furthermore, many of their graduates have limited labour market capabilities. A survey by the IUCEA (2014) found that more than 50% of graduates from East African universities lack critical job skills, with Uganda leading at 63%, Tanzania at 61%, Burundi at 55%, Rwanda at 52% and Kenya at 51%.

Globally, universities' non-compliance with QA mechanisms is associated with inadequate financial resources, weak enforcement mechanisms, non-participatory procedures for developing QA mechanisms, impracticable mechanisms and external interference by funders of QA agencies in executing their duties (see Akalu, 2017; Alzafari and Ursin, 2019; Keykha et al., 2021; Ramírez and Haque, 2016; Wissam and Amina, 2022). While several empirical studies (see Imaniriho, 2020; Mgaiwa, 2018; Mgaiwa and Ishengoma, 2017; Mrema et al., 2023a, 2023b, 2023c, 2024; Neema-Abooki, 2016; Odhiambo, 2014) concluded that some factors, including financial austerity, weak enforcement of QA standards and impracticable QA mechanisms resulted in non-compliance among East African universities, our study assessed whether existing procedures to develop QA mechanisms are contributing to non-compliance in Tanzania. To the best of our knowledge, no study of this nature has been undertaken in East Africa and probably the entire African continent.

Empirical studies across the world have shown that non-participatory procedures to develop QA mechanisms can result in impracticable QA mechanisms that cause university stakeholders to resist implementation (Alzafari and Ursin, 2019; Ramírez and Haque, 2016; Ryan, 2015). The IUCEA (2016) states that compliance with QA standards depends highly on the involvement and participation of key players (such as government, academics, students, employers, parents and the public) in QA activities, including establishment and implementation. This is important because HE quality is multidimensional and stakeholders hold different views on its nature (Alzafari and Kratzer, 2019). Negotiating QA standards would promote stakeholder inclusivity, understanding, ownership and acceptance, and thus implementation (IUCEA, 2016). Our study thus examined the extent to which existing procedures to develop QA mechanisms in Tanzania are participatory.

The development, revision and enforcement of national QA mechanisms for Tanzanian universities fall under the mandate of the Tanzania Commission for Universities (TCU) (TCU, 2019a), while institutional QA units are responsible for institutional QA mechanisms. However, non-compliance levels are high in some universities, and from 2015 to 2022, the TCU suspended, closed and/or deregistered universities or academic programmes found to be extremely non-compliant. During this period, around 12 private university institutions were deregistered, 28 private university institutions were closed and 34 private and public university institutions were banned from admitting students (Mgaiwa, 2018; Mrema et al., 2023a, 2023b). Furthermore, around 832 students were expelled due to their failure to obtain the required two passes in their secondary school examinations (Mgaiwa and Poncian, 2016; Mrema et al., 2023a, 2023b). A hundred and seven students were expelled between 2012 and 2018 for examination irregularities (TCU, 2019b). However, such measures can be regarded as reactive and do not address the root causes of non-compliance.

Against this background, the study explored stakeholders' perceptions of the appropriateness of the procedures which guide the development of national and institutional QA mechanisms to promote public and private universities' (PPUs) compliance in Tanzania. The ultimate goal was to understand whether the existing procedures facilitate key stakeholders' acceptance, ownership and implementation of QA mechanisms.

Procedures to Develop QA Mechanisms and Their Impact on Universities' Compliance

Empirical studies (see Alzafari and Kratzer, 2019; Isaeva et al., 2020; Ryan, 2015) concur that the appropriateness of the procedures to develop universities' QA standards should be measured by key stakeholders' level of participation as this determines their acceptance and ownership of QA standards and thus successful implementation. Such involvement is necessary because different stakeholders represent different interests.

The IUCEA (2016) asserts that QA in HE is more complex than in manufacturing industries since so many different actors are involved in this sector, including the government, academics, students, employers,

parents and the public (see Figure 1 below). As a result, stakeholders hold a variety of viewpoints (Alzafari and Kratzer, 2019). Furthermore, the multifaceted nature of educational quality renders negotiation vital to set practicable QA mechanisms that will be accepted, owned and put into practice to ensure the production of quality graduates (IUCEA, 2016).

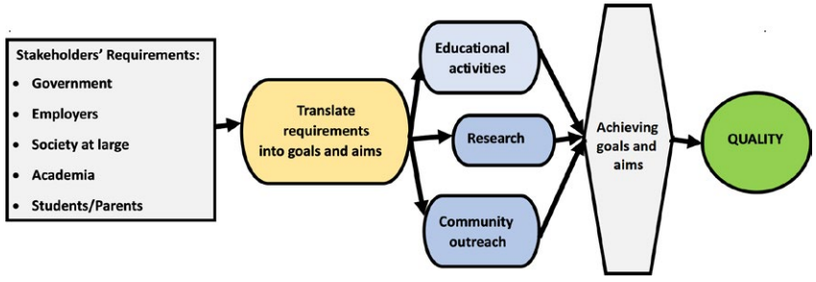

Figure 1: A Model for Setting QA Standards and its Impact on Promoting HE Compliance and Quality

Source: Adopted from IUCEA (2016)

While it is generally accepted that all key players should be involved in setting QA standards, empirical studies reveal that some groups are marginalised. For instance, Alzafari and Ursin (2019) found that internal stakeholders (academics, administrators and students) were more involved in developing institutional QA policies than external ones (graduates, government, employers and accreditation agencies) in European universities. Furthermore, students participated less than other internal stakeholders while employers and graduates were less involved than accreditation agencies. Alzafari and Kratzer (2019) found that such stakeholders' marginalisation is linked to a lack of leadership abilities to foster transparency and trust, persuade all key stakeholders and strike a balance between their interests. Consequently, stakeholders resist implementing QA standards. However, Ryan (2015) and Uludağ et al. (2021) concluded that stakeholders' marginalisation can be associated with their reluctance to participate.

Effective QA leadership is a key instrument to involve stakeholders in developing QA mechanisms (Alzafari and Kratzer, 2019; Mgaiwa and Ishengoma, 2017). Ryan (2015) found that students can be involved in QA meetings and processes as well as complete questionnaires and

take part in focus groups. However, students have been found to be less cooperative in developing QA standards (Ryan, 2015; Uludağ et al., 2021). Isaeva et al.'s (2020) research in Estonia found that it is important to inform students of their QA tasks and what the university expects from them. They also found that using students' native language in QA dialogues promotes participation.

Uludağ et al. (2021) observed that Turkish students can play a variety of QA roles, including as team members (in setting and implementing QA standards), bridges (conveyors of information), consumers and contributors. However, they were challenged by a lack of institutional support, insufficient knowledge of QA and limited time to devote to QA tasks (Ryan, 2015; Uludağ et al., 2021). Uludağ et al. (2021) concluded that addressing students' academic concerns would promote their participation. Mgaiwa and Ishengoma (2017) observed that stakeholders in Tanzanian Private Universities (PRUs) had limited understanding of QA, which undermined their inclusion in developing QA policies.

There is a paucity of research on various key players' involvement in developing national and institutional QA mechanisms in Tanzanian PPUs as well as the appropriateness of such involvement to promote compliance. This study contributed to filling this knowledge gap by investigating stakeholders' perceptions of the existing procedures that guide the development of QA mechanisms to enhance Tanzanian universities' compliance. It was assumed that if all key players were involved in developing QA standards, they would be understood, owned, accepted and more easily complied with (IUCEA, 2016; Mrema et al., 2024), ultimately improving the quality of HE.

The study makes practical and theoretical contributions to the body of knowledge on the appropriateness of the procedures employed to develop national and institutional QA mechanisms in order to promote Tanzanian universities' compliance. Its findings will assist the national regulatory agency, universities, HE planners and policymakers in developing QA mechanisms that improve universities' compliance.

Contextualising University Education and Existing QA Standards in Tanzania

The Universities Act No. 7 of 2005 mandated the establishment of the TCU, which serves as the country's regulatory, supportive and advisory body to promote PPUs' education quality (TCU, 2019a). In December 2019 the commission published the current (3rd edition) manual for QA standards (TCU, 2019a). It took into account the QA harmonisation requirements set by the East African Community (EAC), Southern African Development Community (SADC) and other international bodies that were not part of the previous manual (TCU, 2019a). Input, process and output-related QA standards were included and individual universities were mandated to draft institutional QA documents that should not, however, violate national minimum requirements. In February 2024 the commission published a list of 54 PPUs, as well as university colleges, institutes, campuses and centres that were registered to operate in the country (TCU, 2024).

The literature shows that Tanzanian university stakeholders do not strictly adhere to the established QA mechanisms (Mrema et al., 2023a, 2023b). It has also been observed that this problem is more prevalent in PRUs than public universities (PUs) (Mgaiwa, 2021b; Mgaiwa and Poncian, 2016). The TCU reports from 2015 to 2022 show that it took punitive action against non-complying universities (Mrema et al., 2023a, 2023b); however, cases of non-compliance persist. This promoted this study on the appropriateness of the procedures which guide the development of QA mechanisms in promoting PPUs' compliance.

Methodology

Research Approach and Design

The study was guided by a qualitative approach in exploring, analysing and interpreting the key HE stakeholders' ideas, experiences and views to gain an in-depth understanding of their perceptions of the appropriateness of the procedures which guide the development of QA mechanisms in promoting universities' compliance in Tanzania (Ary et al., 2018). A multiple embedded case study design was employed to guide the exploration through more than one unit of analysis (four university cases) and subunits of analysis (four sub-cases [categories of participants]) within each unit (Yin, 2014). The cases included two PUs (numbered 1 and 4) and two PRUs (numbered 2 and 3) located in Dar es Salaam, Dodoma and Mwanza regions. The study participants included QA Directors (QADs), Senior QA Officers (SQAOs), academics and Students Cabinet Members (SCMs) from the four universities.

Target Population, Sampling Technique and Sample Size

The target population was the members of QA directorates, academics and students from the 54 accredited PPUs in Tanzania. Selection of both the universities (four) and participants (46) was guided by purposive sampling which focuses on the key characteristics (the most relevant, knowledgeable and information-rich) of the sample (Leavy, 2017). The four selected universities are those which were the most (Universities 1 and 3) and least (Universities 2 and 4) frequently reported and sanctioned by the TCU for extreme non-compliance from 2015 to 2022. Thus, each category had PPUs to control biased data. The QADs (one from each university) were selected because they are in charge of all QA activities. The SQAOs (two [SQAO-i and ii] from each university) were selected based on their seniority (i.e., longer experience [at least four years] than others in the QA unit). The academics (two to three from each university) included one (academic-i) chairperson of the academic staff assembly (existing in only PUs 1 and 4) and two (academic-ii and iii) of the most senior (in terms of rank [at least lecturer]) academics specialising in HE quality. The SCMs (six from each university) were current and retired student presidents, ministers and deputy ministers of academic affairs. As summarised in Table 1 below, this made for a total sample of 46 participants.

Table 1: Sample Composition

Categories of Research Participants	Universities				Total
	1	2	3	4	
QADs	01	01	01	01	04
SQAOs	02	02	02	02	08
Academics	03	02	02	03	10
SCMs	06	06	06	06	24
Total	**12**	**11**	**11**	**12**	**46**

Source: Field Data, 2023

Data Collection and Analysis

Data were collected through individual interviews, focus group discussions (FGDs) and documentary review. Individual interviews that lasted 45-60 minutes were conducted with QADs, SQAOs and academics. The FGDs comprised of SCMs at each university and lasted an hour. The interviews and FGDs used semi-structured guides which were administered face-to-face and telephonically. Documentary review was conducted on the national QA guidebook of 2019 as well as individual universities' QA policies and examination regulations obtained from the TCU and four universities, respectively. The aim of the documentary review was to establish how the QA documents were designed. The data from all three methods were analysed using content analysis and the five steps recommended by Leavy (2017), namely, initial immersion in the datasets, identifying units of analysis, coding, analysing the codes' frequencies and interpreting the results.

Trustworthiness, Ethical Considerations and Transferability

Various strategies were employed to enhance the trustworthiness of the findings (i.e., credibility and dependability), including ensuring the representativeness of the sample categories by including all key stakeholders in university QA, expert review of the research instruments (by three experts in HE quality), piloting the instruments at a university before actual data collection, triangulation of data, participants and methods, participants' validation, inter-coding (two coders) and intra-coding (two coders) (Cohen et al., 2018). Ethical requirements were adhered to by observing protocol in obtaining permission from the national level to the participants, with written informed consent obtained from each participant. Furthermore, the anonymity of the institutions and participants as well as the confidentiality of data was ensured (Ary et al., 2018). In terms of transferability, the study used a qualitative approach and a small sample size (i.e., 46 participants from four universities). This means that the findings cannot be generalised to the wider population. Case-by-case transferability is proposed considering the context under which the study was conducted.

Findings

The purpose of the study was to explore stakeholders' perceptions of the appropriateness of the existing procedures for the development of the national and institutional QA mechanisms in promoting universities' compliance in Tanzania. To this end, it explored the existing procedures that guide the development of QA mechanisms and stakeholders' satisfaction with such procedures; and the relationship between the existing procedures and cases of non-compliance.

Procedures for Developing University QA Mechanisms and Stakeholders' Satisfaction

This subsection examines the procedures to develop national and institutional QA mechanisms for universities as well as stakeholders' satisfaction with them.

National QA Guidebook

The current national QA guidebook was developed over two years (2017-2019) (TCU, 2019a, pp. viii-x). The process started with the TCU appointing a six-member Technical Committee (TC) which included the former Executive Secretary of the IUCEA and TCU as chairperson, the former QA director of the University of Dar es Salaam (UDSM), Deputy Vice-Chancellor Academics (DVCA) of the Open University of Tanzania (OUT), Deputy Principal Academics (DPA) of Marian University College (MARUCO) and two senior TCU officers from the QA and legal units. The TC visited 18 accredited universities in the country; three in Morogoro, five in Dar es Salaam and two each in Zanzibar, Dodoma,

Arusha, Mwanza and Kilimanjaro regions in the eastern, northern and central zones. The other four universities submitted written inputs while further inputs were sourced from heads of universities' meetings. Apart from universities, the TC involved stakeholders from the government as well as professional bodies and agencies. It consulted national education policy, economic plans and visions, and international HE quality guidebooks from the African Union (AU), EAC and SADC (see the extract below).

> The revision also considered national socio-economic developmental aspirations spelt out in the Tanzania Development Vision 2025, National Five Year Development Plan 2016/2017–2020/2021 and National Education and Training Policy 2014. ..... Furthermore, stakeholders' inputs raised before, during and after the meeting of Heads of Universities, University Colleges and other Higher Education Institutions in the country held on 15th May 2018 and especially written inputs from the Committee of Vice Chancellors, Principals and Provosts in Tanzania (CVCPT). (TCU, 2019a, pp. ix-x)

During our individual interviews with the QADs, SQAOs and academics and the FGDs with the SCMs in the four selected universities, participants were asked whether they were involved in formulating the national QA guidebook and if they were satisfied with the procedures employed and to justify their responses. All the QADs and SQAOs in universities 1 and 4 (PUs) agreed that their institutions were among the 18 universities visited by the TCU-TC and that they were satisfied with the procedures used to develop the national QA guidebook. A QAD commented:

> Yes, we were visited by the TCU technical committee when the current national QA guidebook was under development. We used that opportunity to provide our opinions. We felt valued as part of the process and our inputs were taken into consideration in the document. (QAD, University 4)

The QAD and two SQAOs from University 3 (PRU) stated that they were able to provide written inputs and then shared their written views with the TCU-TC through the QA directorate. An SQAO said:

> Yes, we were involved. We sat as the directorate and drafted our comments and then we sent them to the TCU. (SQAO-ii, University 3)

However, the same participants from University 3 indicated that they were not satisfied with the process because none of their inputs were taken into consideration. They also felt that the QA guidebook was

formulated with the capacity of the UDSM, the oldest and biggest PU in the country, in mind. The QAD stated:

> .... but we (from PRUs) are not listened to at an adequate level because our inputs are not taken into consideration. For instance, we are complaining most of the quality standards are taken from the UDSM, which are high levels for us to implement. (QAD, University 3)

Moreover, the QAD and two SQAOs from University 2 (PRU) responded that they were not involved and felt that they were deprived of the opportunity to air their views. They also felt that the guidebook set standards that place too many demands on PRUs. One of the SQAOs said:

> We are really sad to implement the guidebook that we didn't participate in designing while we were the key stakeholders. For instance, before our new programme is accredited by TCU, we should have employed the required academics to run that programme. How can PRUs pay academics without being assigned teaching duties? (SQAO-i, University 2)

Eight of the ten academics from the four universities said that they were not directly involved and were dissatisfied with their exclusion. One commented:

> No, but we have QA representatives at the college level who are involved on our behalf. However, one thing I wonder is, they do not consult us to know what we need. (Academic-ii, University 3)

Another academic stated:

> For the national QA guidebook, no, although currently I am a chairperson of [University 1 Academic Staff Assembly], by that time I was a secretary general, so if my academics were required to be involved my office could have the official notification. (Academic-i, University 1)

The other two academics said they were not quite sure because they were on study leave at the time. Similarly, all the SCMs at the four universities said they were not sure because in 2019 they were either in first year or had not yet entered university. One replied:

> ...in 2019 for some of us here was when we started our university education and others were in form VI. So we may not be in a good position to respond to that since the national guidebook was launched in the same year. At least we could have been told by our previous leaders that they were involved. (SCM, University 3)

The findings on university stakeholders' involvement in formulating the national QA guidebook and their level of satisfaction with the procedures employed are summarised in Table 2 below.

Table 2: University Stakeholders' Involvement in Developing the National QA Guidebook and their satisfaction with the Procedures Employed

	Universities				
Categories of Research Participants	**1**	**2**	**3**	**4**	**Total**
QADs	Yes (1)	No (1)	Yes (1-for involvement) and No (1-for satisfaction)	Yes (1)	04
SQAOs	Yes (2)	No (2)	Yes (2-for involvement) and No (2-for satisfaction)	Yes (2)	08
Academics	Not Sure (2) and No (1)	No (2)	No (2)	No (3)	10
SCMs	Not sure (6)	Not sure (6)	Not sure (6)	Not sure (6)	24
Total	**12**	**11**	**11**	**12**	**46**

Source: Field Data, 2023

Institutional QA Mechanisms

The four selected universities' institutional QA documents such as QA policies and examination regulations revealed different approaches to developing such documents. For instance, at University 3, the current QA policy was developed by the QA unit, discussed by university management and then tabled at Senate for approval. An SQAO explained:

> We developed our QA policy last year. We sat as the QA unit and prepared the draft document by consulting the TCU and other universities' QA documents. The draft was tabled to the university management for discussion and suggestions. Then we improved the final draft before being tabled to the Senate for approval and Council for noting. (SQAO-ii, University 3)

In contrast, at Universities 1, 2 and 4 the DVCA convened a special committee with representatives from the QA unit and academics and the QAD as chairperson. The committee consulted the TCU and other

universities' QA documents to develop the first draft. Unlike Universities 1 and 2, University 4 also referred to international universities' QA documents. The first draft was shared with the QA representatives at the academic units to solicit opinions from academics. Lastly the draft was referred to management, Senate and Council for approval. One of the QADs commented:

> The DVC-Academic set the committee with representatives from the QA directorate, admission and academics. Then we consult other international universities and the TCU guidebook to get the first draft. The draft is shared with the academic units' representatives to provide their input for improvement. After the incorporation of academics' inputs, the final draft is tabled to the university management, Senate and Council for approval. (QAD, University 4)

The researchers reviewed QA policies and examination regulations from all four universities to establish whether there was a written statement about how they were developed. While the development process was not disclosed in the preliminary pages, the committee members (in Universities 1, 2 and 4) who developed the policies and the approval dates were listed. For confidentiality purposes, such extracts are not included in this article.

Academics and SCMs were also asked whether they were directly involved in developing institutional QA mechanisms and if they were satisfied with the procedures, and to justify their responses. All seven academics from Universities 1, 2 and 3 as well as all 24 SCMs from Universities 1, 2, 3 and 4 responded that they were not involved, nor were they satisfied with the process. Academics noted that they were represented by QA representatives from their academic units. One responded:

> No, but we have college and department QA representatives who have been involved. However, they have the responsibility of consulting us instead of drafting their views as they used to do. (Academic-ii, University 1)

The SCMs stated that, as a member of Senate and Council, their president is involved at the approval stage. An SCM reported:

> ...for the setting of institutional QA guidelines No, although I remember when I was a president I was invited to attend the Senate meeting and one of the agenda items was to approve the QA policy. But because we were not involved from the start and you find the document has been tabled during

> the Senate meeting. It was hard for me as the president to give my opinions, especially on that technical document at that stage. (SCM, University 2)

Unlike Universities 1, 2 and 3, all three academics from University 4 said that they were involved and were satisfied with the process. One remarked:

> Yes...other academics have been involved once [they] get a chance to be appointed as the members of the committee for designing QA documents and once the draft is shared for improvement. (Academic-i, University 4)

The findings on university stakeholders' involvement in developing institutional QA mechanisms and whether they were satisfied with the procedures are summarised in Table 3 below.

Table 3: University Stakeholders' Involvement in Developing Institutional QA Documents and their Satisfaction with the Procedures Employed

	Universities				
Categories of Research Participants	**1**	**2**	**3**	**4**	**Total**
QADs	Yes (1)	Yes (1)	Yes (1)	Yes (1)	04
SQAOs	Yes (2)	Yes (2)	Yes (2)	Yes (2)	08
Academics	No (3)	No (2)	No (2)	Yes (3)	10
SCMs	No (6)	No (6)	No (6)	No (6)	24
Total	**12**	**11**	**11**	**12**	**46**

Source: Field Data, 2023

Existing procedures to develop QA mechanisms and cases of non-compliance

The participants were also asked whether the existing procedures to develop national and institutional QA mechanisms contributed to non-compliance by universities and the reasons for their answer.

National QA Guidebook

Eight of the ten (80%) QADs, SQAOs and academics from Universities 2 and 3 (PRUs) agreed that the procedures employed to develop the national QA guidebook resulted in non-compliance, while two disagreed with this statement.

At University 2, participants justified their agreement with the statement by observing that, it was difficult to accept the document when they were not involved in its formulation and that they felt that it was flawed in some respects. For example, an academic remarked:

> Yes, there is a connection because technically in developing such a guidebook stakeholders feel ownership and understanding once involved in the setting process. (Academic-ii, University 2)

At University 3, participants were of the view that failure to involve them in drafting the document meant that their inputs were not considered. The QAD replied:

> I can say yes because the document left behind all our inputs. So we are even trying to implement what is possible. ...That is why we have been punished by TCU several times. (QAD, University 3)

At Universities 1 and 4 (PUs), all six interviewed QADs and SQAOs disagreed with the statement, as they felt that other factors contribute to non-compliance. However, all six academics agreed with the statement. A QAD responded:

> No, I think there are other reasons which lead to non-compliance cases such as negligence of PRUs to respect the quality of education over the commercialisation of HE as well as inadequate financial resources which affect even our PUs. (QAD, University 4)

Two participants at University 3 concurred with these sentiments, while those at Universities 1 and 4 who agreed with the statement justified their answer in a similar manner to those who responded in the affirmative at Universities 2 and 3.

The findings on university stakeholders' views on whether existing procedures to develop a national QA guidebook contribute to non-compliance on the part of universities are summarised in Table 4 below.

Table 4: Existing Procedures to Develop the National QA Guidebook's contribution to Universities' Non-compliance

Categories of Research Participants	Universities				Total
	1	2	3	4	
QADs	No (1)	Yes (1)	Yes (1)	No (1)	04
SQAOs	No (2)	Yes (2)	Yes (1) and No (1)	No (2)	08
Academics	Yes (3)	Yes (2)	Yes (1) and No (1)	Yes (3)	10
SCMs	N/A	N/A	N/A	N/A	N/A
Total	**6**	**5**	**5**	**6**	**22**

Source: Field Data, 2023

Key: N/A= Not Applicable

Institutional QA Mechanisms

All the QADs and SQAOs who were interviewed at the four selected universities stated that existing procedures to develop institutional QA documents do not contribute to cases of non-compliance at universities, while all the academics and SCMs agreed with this statement. An SQAO commented:

> No, because we have been trying to involve them without reciprocating and yet [they] have been the ones who are complaining once we enforce implementation. (SQAO-ii, University 2)

The SCMs justified their response by arguing that students' examination irregularities are caused by the fact that students are not adequately aware of QA procedures. The SCM replied:

> I think this is true because we have several students' examination cases that have been caused by their inadequate awareness of examination regulations and QA policies. Also, that has been caused by the fact that we are not involved in the setting and even after setting we receive very limited seminars to understand our dos and don'ts. (SCM, University, 1)

The findings on university stakeholders' perceptions of whether existing procedures to develop institutional QA documents contribute to cases of non-compliance at universities are summarised in Table 5 below.

Table 5: Existing Procedures to Develop Institutional QA Documents' Contribution to Universities' Non-compliance

Categories of Research Participants	Universities				Total
	1	2	3	4	
QADs	No (1)	No (1)	No (1)	No (1)	04
SQAOs	No (2)	No (2)	No (2)	No (2)	08
Academics	Yes (3)	Yes (2)	Yes (2)	Yes (3)	10
SCMs	Yes (6)	Yes (6)	Yes (6)	Yes (6)	24
Total	**12**	**11**	**11**	**12**	**46**

Source: Field Data, 2023

Discussion

This study explored stakeholders' perceptions of the appropriateness of the procedures which guide the development of QA mechanisms in promoting universities' compliance in Tanzania. Overall, the findings revealed that the majority of the participants perceived that these procedures are not effective in promoting universities' compliance. As such, key stakeholders' limited participation in developing the national and institutional QA mechanisms was one of the reasons for cases of non-compliance. This finding concurs with Ramírez and Haque (2016) who observed that the reason for PRUs' non-compliance in Bangladesh is their marginalisation in developing the national QA guidebook as well as the existence of some impracticable QA standards.

More specifically, the findings on the national QA guidebook revealed that the TCU-TC comprises senior academics (with adequate administrative experience in QA) from the PPUs, conventional and open universities, and small to large universities, as well as TCU staff (TCU, 2019a). This means that its composition is based on size, the nature of academic activities and ownership of the universities, with the TCU serving as host. Furthermore, it was found that the two selected PUs were among the 18 universities visited by the TCU-TC, while one PRU shared written input

and the other missed both opportunities. The PUs expressed satisfaction with the procedure employed to develop the national QA guidebook while the PRUs were dissatisfied. Although generalisations cannot be made from the four purposively selected cases, this is cause for concern. The international literature (see Ramírez and Haque, 2016; Rwirahira, 2017) also shows that PRUs have complained of marginalisation and mistreatment by national regulatory agencies.

Furthermore, the description of the methodology employed to craft the TCU guidebook as well as the responses from the academics and students in the four selected universities reveal that academics and students were not given an adequate opportunity to make inputs into the 2019 guidebook. The TCU-TC and QA directorates (as the hosts) of the three involved universities appear to have expended less effort on inviting the general community of academics and students to contribute their views. This implies that at university level, inputs were drawn from administrators and QA officials. Moreover, the TCU does not seem to have involved graduates and employers (as external stakeholders) in formulating the national 2019 QA guidebook (TCU, 2019a). Alzafari and Ursin (2019) observed that students (as internal stakeholders) as well as employers and graduates (external stakeholders) of European universities were less involved in setting institutional QA policies. Consequently, they find it more difficult to comply with QA mechanisms. This violates the IUCEA's (2016) model which calls for academics, students, graduates, employers, society and government's effective involvement in setting university QA mechanisms to promote compliance.

Since HE quality is a multidimensional concept and stakeholders have different viewpoints, their effective involvement in setting QA mechanisms is key to ensuring their ownership and acceptance during implementation (Alzafari and Kratzer, 2019; IUCEA, 2016). For instance, academics are the key players in implementing the national QA guidebook at all QA levels (input, process and output) while students are key university clients who are prepared to be academically capable graduates through well-drafted and implemented quality standards (Alzafari and Ursin, 2019; Uludağ et al., 2021). Based on their experience

of graduates whom they currently employ, employers can advise on best practices that will shape the quality of future graduates (Alzafari and Ursin, 2019). Thus, a combination of viewpoints from these different groups can facilitate the formulation of high quality standards that are accepted by all interest groups (Ryan, 2015).

Stakeholders also reported being marginalised in the development of institutional QA mechanisms. For instance, the findings revealed that unlike University 4, where academics were reported to be involved, but students were marginalised, in the other three selected universities, academics and students were marginalised. The emphasis seems to have been on representatives (student presidents as well as college and department QA officers). Furthermore, these representatives' involvement was not well-coordinated and could be described as shadow involvement. For example, student presidents will find it difficult to approve QA policy drafts if they were not involved from the beginning and have limited awareness of QA. All these factors can result in non-compliance on the part of universities.

Although the majority of the participants acknowledged the relationship between existing national procedures and non-compliance, researchers have noted patterned responses among PPUs. This could be due to the fact that QADs and SQAOs from PUs negated that relationship because they met with the TCU-TC without inviting academics to provide their views. Similarly, academics were aggrieved at not being involved. It was established that 80% of the QADs, SQAOs and academics at PRUs held similar views (i.e., insufficient involvement) to academics from PUs. Again, this could be due to the fact that one of the PRUs was not involved at all and the other felt that its input was not taken into consideration. Another pattern of responses exists with regard to institutional QA policies, where all the interviewed QADs and SQAOs at the four universities stated that the existing procedures to develop institutional QA documents do not contribute to cases of non-compliance at universities, while all the academics and SCMs agreed with this statement. The QADs and SQAOs argued that academics and students were given a chance to participate, but did not respond, while the academics and SCMs felt marginalised and cited a lack of awareness

of QA. This implies that these universities' QA directorates failed to use persuasive approaches to motivate stakeholders' participation, resulting in non-compliance with QA standards that jeopardises the quality of HE.

Conclusion and Recommendations

This study explored stakeholders' perceptions of the appropriateness of the existing procedures which guide the development of QA mechanisms in promoting universities' compliance in Tanzania. The data from the four purposively selected universities revealed that the procedures to develop the national QA guidebook of 2019 did not offer an adequate and open opportunity to the general community of academics, students, graduates and employers to provide their inputs. Turning to the institutional QA mechanisms, unlike University 4, the procedures at the other three universities were observed to not reach the general community of academics and students; instead, they ended with their QA representatives. The participants were thus of the view that the national and institutional procedures have contributed to non-compliance among university administrators, academics and students. Based on these findings, it is concluded that, first, the existing procedures to develop QA mechanisms provide for insufficient stakeholder involvement, particularly with respect to PRUs. Second, inadequate involvement was identified as one of the reasons for non-compliance.

Based on the findings, it is recommended that a broad spectrum of stakeholders should be involved in developing the national QA guidebook, including academics, students, graduates and employers. These groups can best be reached by sharing the questionnaires or drafts of the guidebooks with their leaders who would then solicit their inputs. For instance, academics can be accessed through their university administrators or the Academic Staff Associations of Public Universities and Colleges of Tanzania (ASAPUCT). Students can be reached through their university administrators or the Tanzania Higher Learning Institutions Students Organisation (TAHLISO) and Zanzibar High Learners Federation (ZAHLIFE). Alumni convocations could be asked to assist in obtaining graduates' inputs. Employers can be accessed through the Association of Tanzania Employers (ATE). All these groups are in a position to contribute constructive inputs on improving the national QA

guidebook in order to enhance compliance and HE quality. In the case of institutional QA mechanisms, QA representatives should solicit views from their constituency rather than relying on their personal opinions. Of interest, however, is whether all stakeholders' views can be expected to carry the same weight in negotiating quality standards. Given that the state is mandated to ensure the quality of public services, it could be argued that its specialised agencies and experienced QA professionals have strong legitimacy to set quality standards and QA procedures. The market imperative under which private universities operate could also lead to a leveling down of quality standards. Ultimately, whatever weight is assigned to their contributions, it is imperative to ensure that all voices are heard, thereby facilitating implementation.

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The Struggle to Retain Adept Academic Staff in Private Higher Education Institutions in Ghana: Are Compensation Practices to Blame?

Regina Anuwah Obeng and Francis Ansah

Abstract

The role of compensation in academic staff retention in higher education institutions is a long-standing debate. This study examined the direct effect of compensation on academics' intention to remain at or leave private higher education institutions in Ghana. A correlational approach (survey questionnaire, Partial Least Square Structural Equation modelling) was used to assess the relationship between compensation and retention of 169 full-time academic staff randomly selected across five of these institutions. The study found that, although salary had a significant and positive relationship with academic staff retention (path coefficient = 0.229, t statistic = 2.003, p = 0.046), fringe benefits had a more significant and positive relationship (path coefficient = 0.597, t statistics = 5.484, p = 0.000). Collectively, salary and fringe benefits explained 60% of the variance in academic staff retention. These findings suggest that, because salaries are relatively low in Ghanaian private higher education institutions, fringe benefits have become pivotal in academic staff decision-making in relation to remaining or resigning.

Keywords: staff retention, salary, fringe benefits, universities, human resources, motivation

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Résumé

Le rôle de la rémunération dans la rétention du personnel académique dans les établissements d'enseignement supérieur fait l'objet d'un débat de longue date. Cette étude a examiné l'effet direct de la rémunération sur l'intention des universitaires de rester dans les établissements d'enseignement supérieur privés du Ghana. Une approche corrélationnelle (questionnaire d'enquête, modèle d'équation structurelle des moindres carrés) a été utilisée pour évaluer la relation entre la rémunération et la fidélisation de 169 universitaires à temps plein sélectionnés de manière aléatoire dans cinq de ces établissements. L'étude a révélé que, bien que le salaire ait une relation significative et positive avec la rétention du personnel académique (coefficient de corrélation = 0,229, statistique t = 2,003, p = 0,046), les avantages sociaux ont une relation plus significative et positive (coefficient de corrélation = 0,597, statistique t = 5,484, p = 0,000). Collectivement, le salaire et les avantages sociaux expliquent 60 % de la variance de la fidélisation du personnel universitaire. Ces résultats suggèrent que, comme les salaires sont relativement bas dans les établissements d'enseignement supérieur privés ghanéens, les avantages extralégaux sont devenus un élément central de la prise de décision du personnel académique en ce qui concerne le maintien ou la démission.

Mots-clés : fidélisation du personnel, salaire, avantages sociaux, universités, ressources humaines, motivation

Introduction

The academic workforce constitutes the intellectual, social, and psychological storehouse of every higher education institution (HEI), and provides a competitive advantage to achieve organisational objectives (Ajila and Abiola, 2004; Ortlieb and Sieben, 2012; Janjhua et al., 2016). Talented academics are pivotal to the operations of any HEI in that sustainable production of high-quality graduates depends on the talent and experience of a stable academic workforce (Mabaso and Dlamini, 2017). Thus, retaining adept academic staff is crucial for all HEIs to succeed.

Given this situation, demand continues to rise for talented and experienced academic workers worldwide, which has heightened competition as supply is limited (Bushe, 2012; Theron et al., 2014). For the purposes of this study, adept academics are faculty professionals who are highly qualified, experienced, and capable of enhancing HEIs' educational quality and research output (HESA Insight, 2009). Studies have shown that competition for an adept academic workforce increases as more HEIs are established and accredited to offer various programmes (see Selesho and Naile, 2014; Aktar et al., 2015; Manogharan et al., 2018).

Academic staff retention is thus one of the most critical issues confronting HEIs (Samuel and Chipunza, 2013; Terera and Ngirande, 2014). While the rising number of HEIs contributes to increased competition, it is also shaped by neoliberal ideologies that prioritise profiteering and corporatisation, market-driven approaches, and privatisation in the higher education sector (Maina and Waianjo, 2014; Cannella and Koro-Ljungberg, 2017; Noble and Ross, 2019).

Furthermore, movement of academics from one institution to another is a growing phenomenon (Osbanjo et al., 2014; Maina and Waianjo, 2014) that is of great concern to the leadership of HEIs (Ng'ethe et al., 2012; Korantwi-Barimah, 2017). Retaining academic staff calls for the adoption of novel Strategic Human Resource Management (SHRM) practices. Strategic human resource management in this context includes performance-based rewards, professional development opportunities, flexible working arrangements, redesign of jobs, job analysis methods, participation programmes, and performance management tailored to meet the needs of academic staff (Eneh and Awara, 2016; Allui and Sahni, 2016; Ajao and Aroge, 2024). The key question is which SHRM practices are most likely to contribute to the retention of academics.

The literature notes that compensation management is considered a key SHRM practice that contributes to the retention of academics (Larkin et al., 2012). Indeed, Anuj and Anita (2015) assert that it is the only tool that can be utilised to attract, retain, motivate, and satisfy employees. Similarly, Ngo (2017) argued that competitive compensation packages are key in retaining an institution's best talent. Osinbajo et al. (2014) found that employees' willingness to remain in an organisation

depends on the compensation package provided. Like any other experienced employee, academic staff appreciates attractive, competitive compensation packages (Aktar et al., 2015).

Ghanaian private higher education institutions (PHEIs) are struggling to offer competitive compensation packages that will attract and retain adept academic staff, which threatens their operational viability (Ami et al., 2015; Kwegyir-Aggrey, 2016). These institutions play a critical role in expanding access to higher education, fostering innovation through research, building the country's human capital, creating job opportunities, and raising Gross Domestic Product (GDP) through improved productivity (Jafari-Sadeghi et al., 2020; Sodirjonov, 2020; Tamrat and Teferra, 2020). Their contribution to economic and social development provides a compelling reason to conduct research on academic staff retention issues. Despite their significant impact, PHEIs in Ghana confront substantial operational challenges that threaten their sustainability and effectiveness. According to Amponsah et al. (2013), Owusu-Mensah (2015), and Swanzy et al. (2023), they face financial constraints, inadequate infrastructure, and difficulties in attracting and retaining experienced academics coupled with dwindling student enrolment and challenges in relation to affiliation policy and innovation. These not only hinder their operational capabilities, but also their ability to sustain the quality of education and research necessary to contribute to the nation's development.

It is worth noting that the challenges faced by Ghanaian PHEIs are deeply interconnected. Financial constraints often lead to inadequate infrastructure and non-competitive compensation packages, which in turn make it difficult to attract and retain qualified academics. The lack of resources also impacts these institutions' reputation and competitiveness in the global education market. Furthermore, PHEIs' inability to offer competitive compensation packages results in staff recycling among institutions and academics engaging in other professional activities to supplement their income. The impacts include declining employee loyalty, commitment, productivity and service delivery, and ultimately, achievement of PHEIs' mandate (Comm and Mathaisel, 2003; Ami et al., 2015; Swanzy et al., 2023). It is thus crucial to address these issues

to ensure their sustainability and growth. Against this background, our study empirically investigated the relationship between compensation practices and academic staff retention in Ghana's private higher education sector and explored how improved compensation strategies can enhance institutional stability and staff satisfaction.

Theoretical Framework

The study was underpinned by Adam's 1965 Equity Theory, which is pivotal in explaining the social exchange relationship between an employer and employee. It is particularly relevant in understanding what satisfies or dissatisfies academic staff, thus serving as an important framework to examine staff retention. Equity Theory posits that an individual's motivation at work is driven by his/her perception of fairness concerning the ratio of his/her inputs (such as effort, skills level, and enthusiasm) to outputs (such as salary, fringe benefits, and recognition) compared with others performing similar duties. According to Ramlall (2004) and Jones and George (2009), tension arises when individuals perceive this ratio as disproportionate, leading to dissatisfaction and potentially increased turnover. This understanding underscores the importance of maintaining perceived equity in compensation and recognition practices to enhance retention of academic staff in higher education institutions (HEIs).

Equity Theory further suggests that individuals who join organisations with inputs such as qualifications and effort expect equitable compensation in return, including salary, benefits, recognition, career development, promotion, and a sense of achievement (Saliso, 2016). Compensation packages are generally perceived as fair when there is a balance between what employees contribute and what they receive in return. Perceptions of unfairness can lead to dissatisfaction, resulting in negative work attitudes such as loss of commitment and loyalty, or even a decision to seek alternative employment (Kaur et al., 2013). This implies that the fairness of an organisation's rewards system either motivates employees to be more committed or influences their decision to leave. To this end, the following section puts compensation practices in HEIs into perspective, examining how they can be aligned with Equity Theory to enhance staff satisfaction and retention.

Compensation Practices in Higher Education Institutions

Compensation practices are at the core of any employment contract, reflecting their critical role in defining the employer-employee relationship (Babjohn et al., 2019). They encompass not only monetary rewards but also tangible services and remuneration that form part of the working agreement (Milkovich et al., 2017). Scholars like Rubel and Kee (2015) state that compensation is essentially the remuneration employees receive in exchange for their expertise, time, and effort. Researchers (Bhatia, 2010; Osbanjo et al., 2014; Akthar et al., 2015; Mabaso and Dlamini, 2017; Kweqyir-Aggrey, 2016; Agyapong et al., 2019; Thapa, 2020) classify compensation into direct forms such as wages, salaries, and bonuses, and indirect ones which include fringe benefits like health insurance, retirement plans, and housing allowances. Understanding these components is essential to manage human resources effectively, as they impact employee satisfaction and organisational performance.

Compensation practices have been identified as crucial in enhancing academic staff's performance and HEIs' institutional functionality. Researchers such as San et al. (2012) and Al Doghan (2022) showed that effective compensation schemes not only encourage staff to give of their best, but also foster innovation, loyalty, and retention, which in turn enhance organisational performance (Olaniyan and Binuyo, 2017). Consequently, it is paramount for HEIs to develop and implement novel compensation schemes that are tailored to the needs of their academic staff to promote commitment, satisfaction, and productivity (Swanepoel et al., 2014; Haider et al., 2015). This study analysed direct compensation (basic salary and allowances) and indirect/fringe benefits (retirement plans, educational benefits for staff and their families, health insurance, housing allowances, and leave entitlement). These dimensions were selected due to their relevance and distinctiveness in the Ghanaian higher education sector, highlighting their potential to significantly impact staff well-being and institutional success.

Conceptualising Academic Staff Retention

In today's dynamic and challenging higher education environment, retention of experienced and talented academics is crucial for sustainability (Mwikamba and Simiyu, 2017). As Pienaar and Bester

(2008) emphasise, HEIs must implement effective strategies to retain valuable staff members. Academic staff retention has been a persistent issue that has sparked efforts to devise robust retention strategies (Bartrop-Sackey et al., 2022). As described by Bushe (2012), effective retention involves not only hiring qualified academics but also maintaining a supportive work environment that includes a healthy work-life balance, sound staff relations, and attractive workplace conditions, all underpinned by excellent SHRM and talent management practices. The primary goal is to prevent the departure of experienced academics, which Samuel and Chipunza (2009) note could adversely affect the institution's productivity and profitability. Numerous studies have shown that academic retention is influenced by several factors that must be consistently managed to ensure HEIs' long-term success and desirability as employers of choice (Ng'ethe et al., 2012; Theron et al., 2014; Matimbwa and Ochumbo, 2019).

Empirical Evidence on Compensation and Academic Staff Retention

Compensation is viewed as a crucial instrument in the higher education sector as, when effectively employed, it has the ability to attract, satisfy, motivate, and retain skilled academics (Adil et al., 2020; Zamri, 2023) Compensation management is, therefore, pivotal in any organisation, particularly HEIs looking to attract and maintain their workforce. Studies such as those by Ajmal et al. (2015) and Zamri (2023) highlight that, among various SHRM strategies, compensation practices are essential to enhance employee retention. For instance, Ami et al. (2015) found that poor compensation was a fundamental cause of academic staff dissatisfaction, leading to strikes and turnover intentions. When HEIs offer competitive compensation packages, this not only motivates academics but also enhances their likelihood of remaining with the institution, thereby improving retention. Ng'ethe et al. (2012) established a positive correlation between compensation and retention among academics in HEIs, suggesting that attractive compensation packages make staff reluctant to leave. Similarly, Adil et al. (2020) found a high positive correlation between compensation practices and job satisfaction among academic staff, indicating that good salaries lead to contentment and loyalty, which in turn enhance retention. Tausif (2012) found a strong relationship between such rewards and job satisfaction in Pakistan's

educational sector, with older employees valuing retirement benefits.

Oni (2000) highlighted that non-competitive wages in Nigerian HEIs lead to low motivation among academic staff. Similarly, Arikewoyo (2008) noted that poor conditions of service, including inadequate salaries and fringe benefits, have been contentious issues in negotiations between governments and academic staff unions. Quantitative studies like that by Akhtar et al. (2015) established that compensation accounts for 40.5% of the variance in employee retention, underscoring its significance. Bibi et al. (2016) and Rono and Kiptum (2017) identified a positive correlation between competitive salaries and both retention and job satisfaction, while Metcalf et al. (2005) and Theron et al. (2014) concluded that competitive salaries and fringe benefits are essential to retain academic staff. Koshy and Babu (2016) and Towns (2019) observed that salaries and fringe benefits such as health insurance and professional development opportunities lead to the retention of academic staff. Mutuma and Manase (2013) reinforced the importance of compensation in retaining staff in Kenyan private universities. However, Joarder et al. (2015) and Owor's (2010) research suggests that while compensation is crucial, it is not the sole factor influencing staff retention, as poor policies and working conditions can also drive academic mobility. Snyder and Dillow (2013) and Agyapong et al. (2019) concur and argue for a holistic approach to compensation and working conditions to retain academic talent.

Methods

Research Approach

The study employed a survey research strategy using a correlational research design. This was appropriate as achieving its objectives required analysis of large sets of quantitative data gathered by means of a questionnaire. Such a design is particularly effective for this purpose as it enables the examination of relationships between multiple variables without manipulating the study environment, thus maintaining the natural setting of the data (Bryman, 2016). The survey strategy facilitated data collection from statistically representative groups in PHEIs, which was crucial in accurately determining their compensation practices

(Sekaran and Bougie, 2016). This methodology ensured that the findings are both statistically valid and representative of the broader population, thereby enhancing the reliability of the conclusions drawn with regard to PHEIs' compensation practices.

Sample

Data for the cross-sectional survey were collected from five small and large PHEIs in 2020. A total of 169 full-time academic employees were randomly selected. Each PHEI was first categorised based on its size and type. Within each category, participants were randomly selected to represent different levels of experience, ranging from newly-hired staff to those with more than 20 years' service across various salary scales. This method ensured that the sample accurately reflected the varied composition of academic staff within the sector (Saunders et al., 2016; Sekaran and Bougie, 2016). It also helped to minimise selection bias and enhanced the generalisability of the findings (Saunders et al., 2016). The sample was deemed adequate as, according to Reinartz et al. (2009), PLS-SEM requires 100 cases to achieve an acceptable degree of statistical power. Data analysis was undertaken on the 129 completed questionnaires.

Data Collection Instrument

A self-administered questionnaire with a seven-point Likert scale was used to gather data. Items were developed from recognised scales that have been employed to measure compensation practices and academic staff retention. Fringe benefits and salary scales were measured using eight and six items adapted from scales developed by Islam and Siengthai (2009) and Abeyekera (2007), respectively. Items for academic staff retention were adapted from Kyndt et al. (2009), with 11 question items making up the scale. A questionnaire was employed as this method promotes homogeneity, dependability, and impartiality in data collection and assists in collecting large volumes of data quickly and inexpensively (Neelankavil, 2015; Bryman, 2016).

Study Setting

The establishment of private university colleges in Ghana under Legislative Instrument 317 of 1996 marked a significant shift in the

higher education sector. This Legislative Instrument not only facilitated the creation of these institutions but also set stringent accreditation standards, which were enforced by the National Accreditation Board (Apklu, 2016) that is now part of the Ghana Tertiary Education Commission (GTEC). This ensured that the educational quality of the newly-established private university colleges met national and international benchmarks. The legislative framework was crucial as it introduced a regulated approach to private tertiary education, ensuring that these institutions could make a positive contribution to the country's educational landscape by providing diverse opportunities and addressing increasing demand for higher education. This pivotal change not only expanded educational opportunities but also set the stage for further reform in the Ghanaian education system.

The mentorship requirement for new private university colleges imposed by the GTEC is a pivotal aspect of Ghana's educational regulatory framework. These institutions must operate as university colleges affiliated to autonomous universities for a minimum of ten years (Ansah and Swanzy, 2019). This is intended to ensure that they develop robust academic and administrative systems under the guidance of their mentoring institutions. Mentorship has proven successful in several cases, with university colleges significantly improving their curricula and faculty qualifications, directly impacting the quality of the education provided (Ansah and Swanzy, 2019). Following this decade-long mentorship, the colleges may apply for a Presidential Charter, granting them autonomy to award diplomas and degrees (Ansah and Swanzy, 2019). This crucial step marks a transition from dependence to self-sufficiency, reflecting the broader goal of enhancing higher education standards across the country.

Private university colleges in Ghana are subject to stringent operational standards to ensure their sustainability and quality of education. They are required to submit an annual report on their activities and maintain sufficient, stable funding resources, as they operate on a self-financing basis (Apklu, 2016). The government also supports these colleges by providing tax exemptions, which help alleviate their financial burden and encourage the development of diverse academic programmes (Tsevi, 2014). Commercial and religious studies are the most common academic

programmes on offer, with business studies, information technology, and religious studies being particularly popular. This focus on specific fields reflects market demand and these institutions' strategic responses to educational needs. There are currently 81 accredited private universities and colleges in Ghana, with total student enrollment of about 94 000 (GTEC, 2020). This significant number underscores the vital role these institutions play in the educational landscape, offering specialised and accessible education to a large segment of the population.

Data Analysis and Results

This section presents the data analysis procedure and results.

Data Analysis

The study employed the variance-based approach to Structural Equation Modeling (PLS-SEM) to analyse the data after editing and coding. The PLS-SEM was used because it is robust as it combines path and factor analysis in an all-encompassing statistical technique (Sarwoko and Hadiwidjojo, 2013; Agyapong and Obro-Adibo, 2013) that assisted in establishing the relationship between compensation packages and academic staff retention. In employing the PLS-SEM, the first step is to specify and evaluate the model. This requires two sub-steps: the first is specification and evaluation of the measurement model, and the second specification and evaluation of the structural model (Hair et al., 2016). While the measurement model shows how the study construct and its measurements are related, the structural model shows how the constructs are thought to be related (Hair et al., 2019). These models are discussed below.

Twenty-five indicators were utilised to measure the study constructs as part of the specification of the measurement model. Of these, 14 were used to measure compensation practice with salary having six indicators and fringe benefits six indicators, while 11 indicators were used to measure academic staff retention.

Following the specification, the model was tested for internal consistency reliability, convergent validity, and discriminant validity to ensure the quality scales before using it to test the hypothesis (Hair et al., 2016). The Cronbach Alpha (α) and Composite Reliability (CR) were used to

assess the model's internal consistency reliability. The Average Variance Extracted (AVE) and factor loadings (indicators) were employed to test convergent validity (Hair et al., 2016). Using the Heterotrait-Monotrait (HTMT) Ratio criterion, the discriminant validity of the study constructs (wages, benefits, and retention of academic staff) was also evaluated (Henseler et al., 2015).

The structural model was specified and evaluated after the specification and assessment of the measurement model. One endogenous factor (academic staff retention) and two exogenous constructs (salary and fringe benefits) made up the structural model.

The structural model was assessed using the methodological approach described by Hair et al. (2016) to determine its suitability to forecast the hypothesised relationship between the exogenous constructions and the endogenous construct. This included checking the structural model for collinearity problems, assessing the importance and applicability of the relationships in the model, examining the coefficient of determination (R2), figuring out the effect size (f2), and assessing the predictive relevance (Q2) of effect size. The results are displayed in Tables 4, 5, 6, and 7, respectively.

Results

Tables 1 and 2, respectively, present the findings on the evaluation of the measurement model in terms of reliability, convergent validity, and discriminate validity regarding the relationship between compensation packages and academic staff retention. Table 1 illustrates that the outer loadings for salary, fringe benefits, and academic staff retention range from 0.583 to 0.830, 0.728 to 0.929, and 0.528 to 0.810, respectively.

Moreover, as demonstrated in Table 1, for academic staff retention to academic staff benefits, the CA of the model's construct varied from 0.875 to 0.903. Similarly, the table displays the CR value for academic staff benefits, ranging from 0.900 for academic staff retention to 0.926. The model was assumed to have internal consistency reliability because all the values are greater than the 0.70 threshold value. Its construct validity and reliability were consequently deemed to be established.

The degree to which a construct is distinct from others is gauged by its discriminant validity. High discriminant validity, therefore, shows that

a construct is distinct and captures some phenomena that are distinct from the rest. Assessing the Heterotrait- Monotrait (HTMT) Ratio criterion (Henseler et al., 2015) was one technique to achieve this. To meet this condition, each construct in the model must have an HTMT value of less than 0.9 when the constructs are comparable or 0.85 when they are more dissimilar. As a result, HTMT values greater than 0.9 indicate a lack of discriminant validity. As shown in Table 2, all of the model's constructs' HTMT values met the cut-off of 0.9, indicating that discriminant validity was established (Henseler et al., 2015).

Table 1: Reliability and Convergent Validity

Construct	Item	Loading	CA	CR	AVE
Salary	ASS1	0.759	0.880	0.905	0.547
	ASS2	0.742			
	ASS3	0.792			
	ASS4	0.772			
	ASS5	0.794			
	ASS6	0.830			
	ASS7	0.583			
	ASS8	0.606			
Fringe benefits	ASB1	0.749	0.903	0.926	0.677
	ASB2	0.728			
	ASB3	0.862			
	ASB4	0.860			
	ASB5	0.874			
	ASB6	0.929			
Academic staff retention	ASR1	0.640	0.875	0.900	0.504
	ASR3	0.561			
	ASR3	0.599			
	ASR5	0.712			
	ASR6	0.528			
	ASR7	0.798			
	ASR8	0.755			
	ASR9	0.780			
	ASR10	0.745			
	ASR11	0.810			

Source: Fieldwork (2020)

Table 2: HTMT Results

Path Coefficient	Academic Staff Retention	Fringe Benefits	Salary
Academic staff retention			
Fringe benefits	0.814		
Salary	0.665	0.750	

Note: HTMT inference (-1 < HTMT < 1)

Source: Fieldwork (2020)

Results of the Hypothesis Testing

In order to use the structural model to test the hypothesised relationship among salaries, fringe benefits and academic staff retention, collinearity issues were first checked using the approved Variance Inflation Factor (VIF). As displayed in Table 4, the (VIF) values for the inner model (research variables) and outer model (per scale item) were less than 5 (Hair et al., 2016). This provided proof that multi-collinearity did not exist. Thus, statistical inference would be more reliable. Subsequently, the bootstrapping technique was performed to assess the statistical significance of each path coefficient. As shown in Table 3 and Figure 1, salary had a significant and positive relationship with academic staff retention (path coefficient = 0.229, t statistic = 2.003, p = 0.046) and fringe benefits had a significant and positive relationship with academic staff retention (path coefficient = 0.597, t statistic = 5.484, p = 0.000).

Table 3: Structural Model Results

Path Coefficient	Std. Deviation	T-Statistics	P-Values
Fringe benefits -> Academic staff retention	0.109	5.484	0.000
Salary -> Academic staff retention	0.114	2.003	0.046

Note: P-Values l of 1% is for a critical t-value of 2.58; 5% is for a critical t-value of 1.96 and 10% is for a critical t-value of 1.65 (all two-tailed).

Source: Fieldwork (2020)

Table 3 exhibits the direct effect of academic staff salaries and fringe benefits on academic staff retention in private university colleges in Ghana.

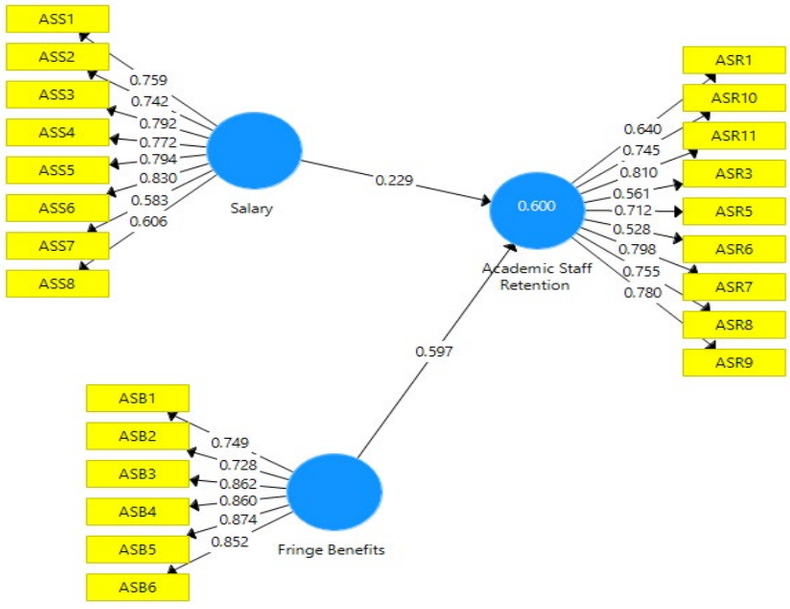

Figure 1: Structural Model

Source: Fieldwork (2020)

Table 4 displays the tolerance values as well as the VIF values for the predictor variables.

Table 4: Collinearity Diagnostics Results

Exogenous variable	Collinearity	
	Tolerance	VIF
Fringe benefits	0.514	1.946
Salary	0.514	1.946

Source: Fieldwork (2020)

Table 5 presents the Coefficient of Determination (R2) of the endogenous variable. Furthermore, the study evaluated the R2 value of the exogenous construct (compensation packages) to determine the total effect on the endogenous construct (academic staff retention). The results displayed in Table 5 and Figure 1 indicate an R2 value of 0.600 of the exogenous

constructs. This means that salary and fringe benefits explained 60% of the variance in academic staff retention.

Table 5: Coefficient of Determination (R2)

	R^2	R^2 Adjusted
Academic staff retention	0.600	0.593

Note: R2 = 0.75 is substantial, R2 = 0.50 is moderate and R2 = 0.25 is weak.

Source: Fieldwork (2020)

Again, the effect size (f2) was examined to determine the influence of each exogenous construct (compensation packages) on the endogenous (academic staff retention) construct by varying R2. Table 6 shows effect sizes of 0.0458 (small) and 0.067 (small) for fringe benefits and salary, respectively. The effect size (f2) was ascertained by following Cohen's (1992) criteria.

Table 6: Effect Sizes (f2)

Structural Path	f^2 Effect Size
Fringe benefits	0.045
Academic staff salary	0.067

Notes: f2 = 0.02 is small, f2 =0.15 is medium and f2 = 0.35 is large effect

Source: Fieldwork (2020)

Lastly, the Q2 of the effect size was determined. As indicated in Table 7, the cross-validated redundancy value for the endogenous variable is 0.267. This shows satisfactory predictive ability of the model based on Hair et al.'s (2016; 2019) guidelines, which require these values to be bigger than 0. What does the satisfactory predicative ability imply for the correlation between compensation packages and academic staff retention?

Table 7: Predictive Relevance (Q2) Results

Constructs	SSO	SSE	Q^2(=1SSE/SSO)
Fringe benefits	115.460	115.460	
Academic staff retention	132.000	97.066	0.267
Salary	151.794	154.794	

Note: Q2 =0.02 is small, Q2) = 0.15 is medium, and Q2 = 0.35 is large

Source: Fieldwork (2020)

Discussion

Drawing on the literature and the Equity Theory adopted for the study, this section discusses the study's results regarding the hypothesised relationships between compensation practices and academic staff retention in PHEIs in Ghana. Specific fringe benefits such as retirement plans, educational benefits for staff and their families, health insurance, and salary such as allowances and basic salary were examined.

Salary and Academic Staff Retention

The study assessed how salary (basic salary and allowances) influences academic staff retention. The structural model results shown in Table 3 indicate that salary (basic salary and allowances) is significantly and positively linked to academic staff retention with (t statistics = 2.003, p = 0.046). The first hypothesis was therefore validated. As a result, it can be concluded that remuneration affects academic staff retention. This finding is in line with Bibi et al.'s (2017) study that identified salary as a crucial element in academic staff retention since it meets staff's needs and gives them tools to advance in an organisation. Similarly, Adil et al. (2020) established a high positive correlation between salary and job satisfaction among academic staff, indicating that good salaries lead to contentment and loyalty, which in turn enhance retention. The Equity Theory posits that when staff perceive that their compensation is not proportionate to their effort, they tend to experience dissatisfaction, which leads to increased turnover intentions. Rathakrishnan et al. (2016) support this finding. The implication is that academic staff will remain in their posts for longer and retention rates will rise when the leadership of Ghanaian PHEIs offers competitive, attractive, and equitable compensation and demonstrates concern for academics (Osibanjo et al., 2014).

Fringe Benefits and Academic Staff Retention

The study also examined the relationship between fringe benefits (such as retirement plans, educational benefits for staff and their families, leave entitlements and health insurance) and academic staff retention. Table 3 showed a significant and positive correlation between fringe benefits and academic staff retention (t statistics = 5.484, p = 0.000). Therefore, hypothesis 2 was accepted. The results are in line with Mabaso and Dlamini (2017) who found that a positive relationship between fringe benefits and satisfaction leads to improved retention among academic staff. Similarly, Tausif (2012) and Kosby and Babu (2016) concluded that fringe benefits offered by a university like retirement benefits, health, life and medical insurance, paid leave, paid holidays, flexible scheduling, and educational assistance strengthen academic staff's bonds with their universities, leading to a clear association between fringe benefits and retention. This finding is also buttressed by the Equity Theory which asserts that offering equitable benefits packages to employees could result in an increased retention rate because proof that they are valued and their skills and effort are deserving of competitive compensation packages is provided from the outset (Prieto, 2023). This suggests that improved benefit packages for academic personnel will increase retention as they will be less likely to leave the institution.

The question of whether or not salary plays a role in the decision to leave one job for another has long been hotly debated among academics and professionals (Sarkar, 2018). Despite decades of research on this issue from many angles, using various approaches and different samples, there is no consensus. Some believe that pay levels are frequently a second-order consideration; one of a wide range of factors that act as potential antecedents of voluntary employee turnover, but are not particularly prominent in most decisions to quit (see Sarkar, 2018). In contrast, others hold that the income received for performing a job is a significant, if not the most important, factor in any decision on where to work.

Our study suggests that salaries play a key role in employee retention. Guthrie (2008) also found that highly competitive pay structures encourage loyalty and staff retention. Selesho and Naile (2014) assert that, although salary is not the only significant element in academic staff retention, it plays a key role in managing retention and performance. Although numerous studies indicate that compensation plays a strategic role in attracting and retaining talented academics, many experts believe that it is not the primary factor in employee retention. Owor (2010) asserts that while a fair and competitive salary is a strong predictor of intention to switch institutions, it is not the most crucial element in retaining employees.

Joarder et al.'s (2015) research on the relationship among pay, security, support, and intention to quit among academics concluded that while money can satisfy employees, it does not guarantee their continued employment. Despite the mixed views on whether or not remuneration plays a sufficient or required role in employee retention, the fundamental truth that employee satisfaction through compensation cannot be ignored persists. Research on compensation and retention since the turn of the century has emphasised the significance of remuneration as a high-commitment practice in understanding retention (Sarkar, 2018). Indeed, retention and salary have become so closely associated that, along with other factors, they are best understood in conjunction with each other.

Sarkar (2018) indicated that, initially, the idea behind compensation was to recompense workers for the services they rendered. This simple goal has evolved into two distinct goals: (a) luring and keeping people; and (b) sustaining and strengthening employee commitment, which is essential for the business to achieve a competitive edge and triumph in the race for talent. Thus, it is clear that salary is the most important HR practice that must be considered to retain talent.

Limitations

This study suffered several limitations that open the door to further research. While there are feedback relationships between salaries and fringe benefits, this was outside the scope of this study. The study also did not focus on whether fringe benefits or salaries contribute more to

the retention of academic staff. Despite the significance of retaining the best employees and treating them as first among equals, there is little evidence to show whether a differentiated compensation approach promotes or undermines talent retention. This could thus be the subject of future research (Lepak et al., 2006; Jiang et al., 2012).

Further research is need to (a) comprehend the benefits and drawbacks of employee participation in compensation management; (b) determine how to implement employee participation in compensation management in HEIs; and (c) categorise employees based on level and consider the impact on employee participation in compensation management and turnover. Research in these sub-areas would be useful in determining how staff perceive the various compensation system elements when the labour force is more skilled and diversified. By including employee input, one can avoid the drawbacks of so-called "mechanistic contingency models" (Cox et al., 2010).

Conclusions and Recommendations

Compensation plays a leading role in the employee retention process. Thus, attractive compensation packages play a critical role in engaging and retaining employees. An organisation's compensation packages are crucial to employee retention. Drawing on the Equity Theory and the literature on employee retention, this empirical study analysed compensation practices' influence on academic staff retention among PHEIs in Ghana. It found that academic staff retention can be improved if university management provides academic staff with competitive and attractive compensation packages. The positive and significant relationship that was established indicates that the more satisfied academic staff are with the compensation package, the more loyal and willing they will be to remain with the institution for a longer period. Given these findings, it is plausible to conclude that compensation practices, particularly salaries and fringe benefits are among the factors responsible for Ghanaian PHEIs' struggle to retain adept academic staff. It is hoped that they will enhance management of PHEIs and other HEIs in Ghana and other countries' understanding and enable them to craft more effective HR and talent management strategies.

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Strategic Cost Management Practices and Performance of Ghanaian Public Higher Education Institutions

Justice Ray Achoanya Ayam

Abstract

Higher education in Ghana struggles with transparency and reliability in cost determination, especially in public higher education institutions (PHEIs). Existing cost accounting methods tailored to funding and regulatory compliance often fall short in capturing all measurable outputs and lack the standardised reporting frameworks seen in developed countries. This article examines current strategic cost management practices in Ghanaian PHEIs, drawing data from the Ghana Ministry of Education, academic databases, and reports from the World Bank and UNESCO Institute for Statistics. The findings reveal the need for the country's PHEIs to adopt transparent financial reporting and improve cost structures. Innovative cost management practices and a culture of fiscal prudence are necessary to ensure financial sustainability and operational efficiency. Policy interventions are recommended to develop a unified, international best practice-aligned cost accounting framework for all PHEIs in Ghana.

Key words: higher education, cost management, financial sustainability, financial performance, Ghana

Résumé

Au Ghana, l'enseignement supérieur est confronté à des problèmes de transparence et de fiabilité dans la détermination des coûts, en particulier dans les établissements publics d'enseignement supérieur

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(PHEI). Les méthodes de comptabilité analytique existantes, adaptées au financement et à la conformité réglementaire, ne parviennent souvent pas à saisir tous les résultats mesurables et ne disposent pas des cadres de reporting normalisés que l'on trouve dans les pays développés. Cet article examine les pratiques actuelles de gestion stratégique des coûts dans les IESP ghanéens, en s'appuyant sur des données du ministère ghanéen de l'éducation, des bases de données universitaires et des rapports de la Banque mondiale et de l'Institut de statistique de l'UNESCO. Les résultats révèlent la nécessité pour les IESP du pays d'adopter des rapports financiers transparents et d'améliorer les structures de coûts. Des pratiques innovantes de gestion des coûts et une culture de la prudence fiscale sont nécessaires pour assurer la viabilité financière et l'efficacité opérationnelle. Des interventions politiques sont recommandées pour développer un cadre de comptabilité analytique unifié et aligné sur les meilleures pratiques internationales pour tous les IESP du Ghana.

Mots clés : enseignement supérieur, gestion des coûts, viabilité financière, performance financière, Ghana

Introduction

Financial sustainability is a pressing concern for higher education institutions (HEIs) worldwide, necessitating a thorough understanding of operational costs for informed financial management and resource allocation (Olariu and Brad, 2022). While standardised costing frameworks like standard costing and activity-based costing (ABC) are commonly used in developed countries, research indicates a lack of such initiatives in developing countries like Ghana. The macro-economic challenges facing Ghana, characterised by debt distress, exchange rate volatility and a recent International Monetary Fund (IMF) bailout, have exerted significant pressure on the financial health of public higher education institutions (PHEIs). These economic difficulties have compounded the already strained financial resources available to PHEIs, leading to limited or stagnant funding in real terms and intensifying the need for robust cost management strategies. In such a constrained financial environment, strategic management of costs becomes not only crucial but indispensable to ensure the financial sustainability and

operational efficiency of PHEIs. As highlighted by Finne, Haga, and Sundvik (2023), effective cost management is critical during economic downturns, when mismanagement of resources can exacerbate financial instability. Given the escalating costs of education, budget constraints and limited resources, it is crucial for HEIs in Ghana to implement effective cost management strategies to ensure financial viability and operational efficiency (Tamrat, 2022).

In the context of HEIs, strategic cost management practices involve identifying and managing the costs associated with academic programmes, research activities, administrative operations and other institutional functions (Langfield-Smith, Thorne and Hilton, 2018). Effective strategic cost management practices are essential for Ghanaian PHEIs to attain financial sustainability and improve their overall performance (Tze Yin, Ai Ping, Siti Nabiha and Sukumar, 2023). Inadequate cost management practices can lead to financial inefficiencies, reduced service quality and limited access to resources, negatively impacting overall performance. In contrast, PHEIs that implement effective cost management practices have better financial outcomes and improved service quality (Kim and Chung, 2023). The COVID-19 pandemic further highlighted the significance of cost management practices in PHEIs (Finne, Haga and Sundvik, 2023). Given the financial pressures currently facing them in developing countries such as Ghana, investing in effective cost management practices is central to improve financial sustainability and performance.

The central theme of our study pertained to the lack of transparency and reliability in determining the cost of services provided at various levels within Ghana's PHEIs. As illustrated in Table 5, the findings revealed a persistent increase in the variation between the standard unit cost per student and the actual unit cost of PHEIs, which indicates weak costing processes. Furthermore, Table 6 presents an average deficit of about 45% between 2017 and 2021, which suggests an underdeveloped cost management system. In addition, the current cost accounting methods prioritise compliance with funding agencies and government regulations over capturing all quantifiable, customised outputs produced by PHEIs in the country. The study underscores the pressing need to establish a standardised cost reporting format that can capture all quantifiable

outputs produced by PHEIs in Ghana, similar to the approach taken in developed countries.

The study explored strategic cost management practices in Ghana's PHEIs and their impact on institutional performance and sustainability. It contributes to the literature by examining current practices, identifying challenges, and suggesting areas for improvement. The study is significant as it alerts policymakers, institutional leaders, and education stakeholders to the importance of effective cost management and its influence on institutional performance. It also lays the groundwork to develop policies and guidelines for cost management in PHEIs in Ghana and offers insights for developing countries facing similar challenges in managing PHEIs' costs.

This article begins by outlining the study's purpose and structure, followed by a literature review and the methodology employed. The analysis is organised into several key sections: exploration of existing cost management practices, identification of the associated challenges and opportunities, and an evaluation of best practices and innovative approaches. It further examines the implications of these cost management strategies for institutional performance. The article concludes with a set of targeted recommendations aimed at enhancing cost management practices in order to promote financial sustainability and operational effectiveness in Ghanaian PHEIs.

Objectives of the Study

The study aimed to analyse the strategic cost management practices in PHEIs in Ghana and their impact on institutional performance. The specific objectives were to:

1. Examine Existing Cost Management Practices: Investigate the prevailing cost management strategies within Ghanaian PHEIs to understand their current operational frameworks.
2. Identify Challenges and Opportunities: Analyse the challenges and opportunities associated with cost management in Ghanaian PHEIs, focusing on factors that impact financial efficiency and institutional growth.

3. Evaluate Best Practices and Innovative Approaches: Assess best practices and innovative cost management approaches that can enhance the financial sustainability and performance of PHEIs in Ghana.
4. Analyse Implications for Institutional Performance: Evaluate the impact of different cost management strategies on the overall institutional performance and long-term sustainability of PHEIs in Ghana.

Research Questions

The research questions were:

What are the current cost management strategies employed by PHEIs in Ghana?

What are the main challenges and opportunities associated with cost management in Ghanaian PHEIs?

What best practices and innovative approaches can enhance cost management in Ghanaian PHEIs?

How do different cost management strategies impact the institutional performance and sustainability of PHEIs in Ghana?

Literature Review

Cost Management Techniques, Concepts and Principles

The contemporary financial landscape presents PHEIs with an increasingly complex funding environment, necessitating a nuanced approach to cost management. This underscores the need for profound comprehension of the intricacies associated with institutional activities and projects, particularly in the context of financial sustainability (Usman and Ab Rahman, 2023; Estermann and Claeys-Kulik, 2013). Cost management frameworks developed in the United States and Europe are pivotal in enhancing transparency and equity in the allocation of institutional costs (Kimball and Iler, 2023). Deployment of cost management concepts and principles enables PHEIs, alongside other organisations, to meticulously allocate financial resources, exercise

stringent cost control, maximise value, and ultimately, achieve their organisational objectives (Ameen, Ahmed and Abd Hafez, 2018).

A sophisticated array of costing techniques is available to PHEIs to achieve their financial imperatives. These include Standard Costing, ABC, Target Costing, Life Cycle Costing, Value Chain Costing, Quality Costing, Kaizen Costing, and Backflush Costing (Ndoloka, 2019). Each presents distinct methodologies and strategic benefits, thereby offering institutions a diversified toolkit for effective financial stewardship.

Table 1 provides a detailed comparison of various managerial accounting costing techniques, elucidating their objectives, cost classifications, rationale, benefits, and inherent limitations. Standard Costing is predicated on comprehensive allocation of costs for services and products, incorporating Direct Material Cost, Direct Labour Cost, and Overheads. While it fosters efficiency and cost control, it is not devoid of challenges, such as the controversial materiality limits for variances and potential morale issues among the workforce.

Table 1: Costing Techniques and Characteristics

Costing Technique	Objective	Cost Classification	Rationale	Benefits	Limitations	Source
Standard Costing	Full costing of services	Direct Material Cost, Direct Labour Cost, Overheads	To achieve maximum efficiency and cost control	Improved cost control	Controversial materiality limits for variances, non-reporting of certain variances, and low morale among some workers	Horngren, C.T., Datar, S.M., and Rajan, M. (2020).
Activity-Based Costing (ABC)	Competitive pricing, service profitability	Overheads	Cost assignment for managerial decision-making	Provides realistic manufacturing costs for specific products, identifies inefficient processes and targets for improvement, determines product profit margins more precisely, offers better understanding and justification of costs in manufacturing overheads	Collection and preparation of data is time-consuming, costs more to accumulate and analyse information, source data isn't always readily available from normal accounting reports, setting up an ABC system is time-consuming and expensive to maintain	Kaplan, R.S., and Anderson, S.R. (2007).
Target Costing	Competitive pricing	Direct cost, Overheads	Cost reduction, shows management's commitment to process improvements and product innovation to gain competitive advantage	The product is created in line with customer expectations; thus, the customer feels more value is delivered	Target pricing relies on correctly estimating the final selling price of the product. Estimating too low a price and then accordingly imposing rigid constraints on cost may place an unrealistic burden on the production department	Cooper, R., and R. Slagmulder (1997).
Life Cycle Costing	Cost reduction and process improvement	Direct cost, Overheads, Investment cost	Continuous improvement, non-production costs will become more visible, and the potential for their control is increased	Provides insights into understanding and managing the total costs incurred throughout its life cycle	Deemed to be costly, labelled as time-consuming, accuracy of data is doubted, and collecting data for analysis is tedious	Ellram, L.M. (1995).

Value Chain Costing	Competitive advantage and cost efficiency	Direct cost, Overheads	Continuous improvement, assesses ineffective value chain activities for mitigation, appreciates the linkages and interconnections along the different business activities	Supports business activities decision making	Extensive data collection and analysis needed, costly and time-consuming for organisations with complex supply chains or multiple units. Not suitable for highly competitive or rapidly changing markets as cost reduction focus may impede innovation and strategic investments, limiting adaptation to market changes	Porter, M.E. (2008).
Quality Costing	Waste reduction and quality improvement	Direct cost, Overheads	Quality improvement, fewer product defects, higher service/ product quality	Increased customer satisfaction	Merely measuring and reporting quality costs may not necessarily address product quality issues, results more often lag behind quality improvement initiatives	Al Faruq, M. S. S., Rozi, M. A. F., and Sunoko, A. (2023).
Kaizen Costing	Cost reduction below standard cost	Direct cost, Overheads	Quality improvement, creates a better work environment, improves staff and customer satisfaction, promotes the formation of task and multifunctional teams, reduces waste and promotes process improvement	Distorts the entire management system, staff unwillingness to change the existing system, staff training could be expensive and very demanding	Potential disruption of management systems, staff resistance to change, high training costs, and diminishing returns as further improvements become harder to achieve.	Hosono, A. (2009).
Backflush Costing	Lean inventory management	Direct cost, Overheads	Waste reduction, relatively easy to assign costs to inventory, simplified journal entry at the end of the production process in assigning costs to products	Only suitable for Just-in-time operations where production and sales volumes are almost equal	Unsuitable for long-run manufacturing processes, not compatible with external financial reporting requirements due to non-compliance with reporting standards	Fullerton, R.R. and McWatters, C.S. (2004).

Theoretical Framework in the Context of Cost Management

Cost management in PHEIs represents a critical axis around which institutional sustainability and academic excellence revolve. Within the broader framework of financial management, cost management encompasses strategic planning, control, and continuous monitoring of financial resources, aiming to optimise their use in alignment with institutional objectives (Nartey, Aboagye-Otchere and Simpson, 2022). The theoretical underpinnings of cost management are deeply rooted in multiple disciplines, each contributing distinct perspectives that enrich the discourse.

Transaction Cost Theory, a foundational construct in this domain, offers profound insights into the internal and external governance of organisational activities. Simons (2019) postulated that firms inherently exist to minimise the costs of economic transactions through negotiation, monitoring and enforcement, thereby influencing their structure and operational modalities. Hasanah (2024) reaffirmed the mechanisms by which governance structures mitigate these costs. In PHEIs, the application of this theory manifests in strategic cultivation of long-term supplier relationships and enhanced procurement transparency. These serve to reduce information asymmetry and lower transaction costs, thereby facilitating more efficient allocation of resources. For instance, strategic vendor partnerships can not only secure reliable supply chains but also establish a robust operational framework that underpins academic excellence.

Complementing Transaction Cost Theory, Contingency Theory posits that cost management strategies are inherently context-specific. This theory advocates for a nuanced approach, wherein PHEIs tailor their cost management practices to their unique organisational characteristics and the external environment (Pavlatos, 2018). With its focus on opportunity costs and alternative allocation of resources, Economic Cost Theory guides decision-making processes in educational contexts by ensuring that resource allocation is both informed and optimised (Shand and Bowden, 2022).

Cost-Benefit Analysis further enriches this discourse by providing a systematic approach to evaluate the economic viability of investment

decisions. Through this lens, PHEIs are equipped to prioritise initiatives that promise the most significant returns relative to their costs. Resource Dependency Theory is another critical framework that underscores the importance of managing external dependencies such as suppliers and funding sources in shaping organisational behaviour and strategic outcomes (Chumba, 2023). Human Capital Theory complements this by emphasising the role of education and skills development in driving organisational productivity, advocating for strategic investment in human resources as pivotal to achieving cost management objectives (Yorks, Abel and Rotatori, 2022).

Strategic frameworks, including those articulated by Porter (1980) and Kaplan and Norton (1996 and 2001), further contribute to this intellectual discourse. Porter's competitive strategy framework emphasises the importance of differentiation and cost leadership as pathways to sustainable competitive advantage. The Balanced Scorecard developed by Kaplan and Norton translates strategic objectives into actionable performance metrics, providing PHEIs with a holistic tool to monitor and enhance their operational alignment with institutional goals. This dual focus on strategy and performance highlights the need for continuous adaptation in the dynamic educational setting (De Jesus and Alves, 2023; Kiriri, 2022).

The Unified Cost Management System and Ghanaian Higher Education

The concept of a unified cost management system, inspired by the Full Economic Costing (FEC) framework utilised in the UK, presents a compelling solution to the myriad challenges associated with resource allocation and cost management in Ghanaian PHEIs. Such a system could significantly improve equitable distribution of resources across institutions, irrespective of their size, category, or research intensity, thereby promoting transparency, sustainability, and enhanced institutional performance. The adoption of this model aligns with global trends in higher education (HE) financing, which increasingly emphasise the need for comprehensive, precise cost management practices (Sheikh, Chandler, Hussain and Timmons, 2022).

Full Economic Costing (FEC) Model

The FEC model, which has been successfully implemented across the UK's HEIs, offers a comprehensive approach to the allocation of both direct and indirect costs. It meticulously accounts for the totality of costs associated with research, teaching, and administration, ensuring that universities receive funding commensurate with their operational expenses (Benner, Grant and O'Kane, 2022). Such a model proves particularly efficacious in research-intensive environments where substantial resources are required to maintain high standards of research output and quality (Nicol and Coen, 2023).

The integration of the FEC model with performance-based funding is an important advancement in resource allocation within HEIs. This approach ties financial support directly to critical performance indicators, including research productivity, graduation rates, and student employability. It not only rewards institutions for efficient management of costs, but also actively encourages enhancements in both the academic and operational domains. Such a framework ensures that funding mechanisms are closely aligned with institutional expenditure while simultaneously promoting higher standards of educational and research outcomes (Benner, Grant and O'Kane, 2022; Nicol and Coen, 2023).

Within the Ghanaian context, the adaptation of an FEC model would necessitate a granular analysis of all cost drivers within public tertiary institutions. This would enable institutions to allocate indirect costs such as utilities, administrative salaries, and maintenance with enhanced precision. Research-intensive institutions such as the University of Ghana and Kwame Nkrumah University of Science and Technology stand to benefit significantly from this model. By securing appropriate funding to support extensive research activities, this approach would not only promote financial sustainability, but also align resource allocation with the specific needs of each institution. The allocation of costs under this model can be illustrated through the categories and items detailed in Table 2.

Table 2: Full Economic Costing (FEC) Model

Cost Item	Description	Allocation Basis	Source
Academic Salaries	Salaries of faculty directly involved in teaching/research	Allocated directly to teaching/research activities	Langfield-Smith, K., Thorne, H., and Hilton, R.W. (2018).
Research Material	Consumables and equipment used in research	Based on actual usage in research projects	
Library Services	Costs associated with library resources and staff	Allocated based on student/staff numbers	
Research Related Travel Expenses	Travel costs for research-related activities	Allocated to specific research projects	
Administrative Salaries	Salaries of administrative staff	Allocated based on departmental usage	
Building Maintenance	Costs related to maintaining university facilities	Allocated based on space usage	
Utilities (Electricity, Water, etc.)	General utilities for university operations	Allocated based on building occupancy rates	
IT Support	Costs of IT services and infrastructure	Allocated based on user numbers or department size	
Depreciation of Equipment	Depreciation of university-owned equipment	Allocated based on usage in teaching/research	

Performance-Based Funding (PBF)

The integration of a Performance-Based Funding (PBF) model within the unified cost management system ensures that funding is closely tied to institutional performance metrics, such as student enrolment, graduation rates, research output, and employability outcomes. Successful implementation of this model in various European countries, including Denmark and the Netherlands, has led to improved efficiency and effectiveness in HE funding (Lambrechts and Lepori, 2023).

A PBF model would incentivise public Ghanaian tertiary institutions to optimise their performance by aligning funding with strategic goals. Those demonstrating high levels of student success and research excellence would receive greater financial support, encouraging other institutions to adopt best practices and strive for similar achievements. This competitive funding environment would drive continuous improvement across the sector, fostering a culture of accountability and excellence. Furthermore, the PBF model can be tailored to account for the diverse missions of Ghanaian PHEIs. Teaching-intensive institutions could be evaluated based on metrics reflecting their primary focus on undergraduate education, while research-intensive institutions could be assessed based on research output and impact. This dynamic approach ensures fair evaluation and appropriate funding allocation, reflecting each institution's unique contributions to the HE landscape.

Ghana typically releases subventions to PHEIs based on more traditional, less performance-oriented criteria (Oyewole, 2022). These may include factors like student enrolment numbers, staff salaries, infrastructure needs, and historical funding levels (Newman and Duwiejua, 2015). While some elements of performance might be considered, they are generally not as explicitly tied to budget allocations as in a performance-based model.

Table 3 illustrates the PBF model.

Table 3: Performance-Based Funding (PBF) Model

Source: Author's Construct

Performance Metric	Cost Item	Description	Allocation Basis	Allocation Rate Formula	Weight (%)	Source
Student Success	Graduation Rates	Rewards based on the number of students graduating	Allocated as a percentage of the overall budget	(Graduates/Total Students) × Total Budget	20	
	Student Retention	Funding tied to year-on-year student retention rates	Allocated based on retention improvement	(Retention Rate Increase) × Retention Budget	15	
	Employment Outcomes	Funding linked to graduate employability	Allocated based on graduate employment statistics	(Employment Rate) × Employment Outcome Budget	15	Sarrico, C. S. (2020).
Research Output	Research Publications	Number and quality of research publications	Allocated based on impact factor or citation index	(Impact Factor/ Citation Index) × Research Budget	10	
	Research Grants	Success in obtaining external research funding	Allocated based on grant value/ number	(Grant Value or Count) × Research Grant Budget	10	
	Patents and Innovations	Patents and innovative projects developed by the university	Allocated based on patent count	(Patent Count) × Innovation Budget	5	
Teaching Quality	Student Satisfaction	Survey results on student satisfaction with teaching	Allocated based on satisfaction scores	(Satisfaction Score) × Teaching Quality Budget	10	
	Course Completion Rates	Percentage of students completing courses on time	Allocated based on course completion rates	(Completion Rate) × Course Completion Budget	5	
Institutional Efficiency	Administrative Efficiency	Reduction in overhead costs	Allocated based on cost-saving measures	(Overhead Cost Reduction) × Efficiency Budget	5	
	Resource Utilisation	Effective use of allocated resources	Allocated based on resource efficiency ratios	(Resource Efficiency Ratio) × Utilisation Budget	5	

Balancing Equity and Efficiency in Resource Allocation

Balancing equity and efficiency in resource allocation is a fundamental challenge in HE financing, particularly in the context of diverse institutional needs. Integration of the FEC and PBF models into a unified cost management system offers a robust framework to address this challenge.

By standardising the measurement and allocation of both direct and indirect costs, the FEC model ensures that all institutions, regardless of size or mission, have equitable access to the resources required for effective operation. This is particularly relevant for smaller institutions or those primarily focused on teaching, where operational costs may be lower, but the need for sufficient funding to maintain educational quality remains critical. As noted by Irawan, Supriyatna, Widjaja and Lin (2021), accurate cost accounting through FEC can significantly enhance resource efficiency, leading to more informed budgetary decisions and better alignment of resources with institutional priorities.

For larger, research-intensive institutions, the PBF model offers a complementary approach, ensuring that funding reflects not only the higher operational demands but also the substantial research contributions of these institutions. Successful application of these models in the UK has demonstrated their effectiveness in improving financial management and ensuring that universities receive funding commensurate with their cost structure (McMillan, 2014). The UK's Research Excellence Framework (REF) exemplifies how performance-based metrics can be integrated with cost management to enhance research quality and impact (HEFCE, 2015).

Similarly, strategic implementation of PBF models in Denmark and the Netherlands has led to more strategic and outcomes-focused funding, driving improvements in teaching and research and fostering a culture of transparency and accountability, which are key objectives for any unified financial system in Ghana (Jongbloed and Vossensteyn, 2016).

The experiences of these European countries provide compelling evidence of the potential applicability and effectiveness of the FEC and PBF models in the Ghanaian context. Integrating these models can

drive improvements in both equity and efficiency, ensuring that all institutions are adequately resourced to fulfil their educational mission while promoting excellence in research and teaching.

Contextual Analysis

In developing regions, HE's classification as either a public or private good profoundly shapes funding strategies and institutional dynamics (Kezar and Bernstein-Sierra, 2024). Public higher education institutions often face fluctuating and insufficient public funding, forcing them to adopt varied financial strategies to ensure their survival (Ruiz-Morris, 2023). This fiscal uncertainty frequently catalyses a shift toward corporate models, a transformation driven by both adaptive necessity and external pressures (Crew and Crew, 2020). Within this context, the integration of market-oriented practices and the pursuit of alternative revenue streams emerge as fundamental strategies (Alajoutsijärvi, Alon and Pinheiro, 2021).

The New Public Administration (NPA) paradigm, which rose to prominence in the latter half of the 20th century, responded to perceived inefficiencies in traditional public administration. Emphasising efficiency, accountability, and strategic resource allocation, NPA strives to achieve value for money (VFM) in public service delivery (Torneo, 2020). A cornerstone of NPA, VFM focuses on maximising outcomes from limited public resources, ensuring that all expenditure yields the highest possible benefit (Ewang, 2019).

In Ghanaian HE, the VFM paradigm is evident in governmental efforts to enhance financial accountability and resource allocation within public universities. The adoption of performance-based funding models, stringent financial oversight, and reforms aimed at increasing institutional efficiency underscore a commitment to measurable public investment outcomes (Sześciło, 2020). These initiatives align with the broader objectives of the Ghana Tertiary Education Commission (GTEC) and the National Accreditation Board (NAB) to enhance institutional effectiveness and accountability (Alomenu, 2023).

Market-driven activities in HE, characterised by the application of market principles such as competition, consumer choice, and

revenue generation, have roots in neoliberal ideology. This approach commoditises education, subjecting it to market forces. Institutions that adopt this model are encouraged to compete for students, research funding, and partnerships, thus generating revenue streams independent of government support (Pucciarelli and Kaplan, 2016).

Despite reliance on government funding, Ghanaian public universities increasingly incorporate market-driven practices. Strategies such as fee-paying programmes, partnerships with private entities, and international student recruitment reflect a gradual shift towards market orientation within a predominantly public system (Davis and Farrell, 2016). This dual focus on VFM and market-oriented activities represents a hybrid model, where universities must balance public accountability with market responsiveness.

In the sub-Saharan African (SSA) context, the volatility of the HE market, compounded by underfunding, inconsistent government support, and rapid enrolment growth, demands a nuanced analysis that extends beyond conventional frameworks. Addressing these complexities is essential to develop strategies that effectively support PHEIs in SSA (Oketch, 2023).

Methodology

The study employed a comprehensive methodology combining a systematic literature review and in-depth document analysis of strategic cost management practices within PHEIs in Ghana. This approach integrated data from the academic literature, policy reports, and financial datasets for robust analysis.

Data Collection

Systematic Literature Review: The literature review involved systematic searches of academic databases such as JSTOR, ProQuest, and Google Scholar, along with relevant websites of Ghanaian PHEIs and government agencies. Specific keywords and criteria were used to identify high-quality, relevant and recent sources. The articles were screened based on their relevance to the research objectives, quality, and date of publication.

Financial Datasets: Financial datasets were obtained from the GMoE and Ghana Education Sector performance reports, providing essential quantitative data on PHEIs' financial health and strategic cost management practices.

Table 4 sets out details of the key documents consulted and their sources.

Table 4: Key Documents and Data Sources

Document Title	Source of Data	Nature of Data	Link/Access Information
Annual Financial Reports of Ghanaian Public Universities (2019-2023)	University Archives	Financial data and cost management reports	Available via institutional access or on request
Public Finance Management Act (PFMA), 2016	Government of Ghana	Legal and regulatory framework	Ghana Ministry of Finance, https://mofep.gov.gh/sites/default/files/acts/PUBLIC-FINANCIAL-MANAGEMENT-ACT-2016.pdf
Ghana Tertiary Education Commission (GTEC) Reports (2019-2023)	GTEC	Policy documents and strategic reports	GTEC Publications
Strategic Plans of Ghanaian Public Universities (2019-2023)	University Websites	Institutional strategy documents	Available via institutional access or on request
Ghana Tertiary Education Policy (2019)	Ministry of Education	National policy documents	Available via Ministry of Education, Ghana
Teixeira, P., Biscaia, R., and Rocha, V. (2021).	Google Scholar	Comparative international analysis	https://doi.org/10.1080/01900692.2021.2003812
Suhail, G. (2017).	ProQuest	Financial management strategies	https://search.proquest.com/openview/70e55198ca94d79761e9752d324c1eb3/1?pq-origsite=gscholarandcbl=18750

Ghana Education Sector Performance Reports (2015-2023)	Ghana Ministry of Education (GMoE)	Educational performance metrics and financial datasets	Available via Ministry of Education, Ghana
Higher Education Reforms in Africa (2000-2023)	African Union and Association of African Universities (AAU)	Comparative analysis of higher education reforms across Africa	Available through AAU and AU websites
World Bank Reports on Higher Education in Africa (2010-2023)	World Bank	International comparative analysis of higher education financing	World Bank Education
Estermann, T., and Claeys-Kulik, A. L. (2013)	European University Association	Full costing practices and progress in Europe	Link to EUA Document
TRAC Development Group (2023).	TRAC Development Group	Guidance on full economic costing in UK higher education	Link to TRAC Guidance
UNESCO Institute for Statistics: Global Education Monitoring Reports 2023	UNESCO Institute for Statistics	Comprehensive global data on education, including financial and performance metrics for higher education	UNESCO GEM Report
UNESCO Institute for Statistics: Data for Sustainable Development Goals (SDGs) (2015-2023)	UNESCO Institute for Statistics	Data on education financing and management in alignment with SDGs, with relevance to higher education institutions	UNESCO Institute for Statistics Website

Newman, E. (2013). a	Google Scholar	Financial management strategies	https://ojs.amhinternational.com/index.php/jevr/article/view/131
Tsyhaniuk, D. L., and Akenten, W. N. (2021).	Google Scholar	Financial management strategies	https://essuir.sumdu.edu.ua/handle/123456789/87474
Appiah, K. O. (2010, June).	Google Scholar	Financial management strategies	https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2405927

Source: Author's Construct

Thematic Analysis Using NVivo

Thematic analysis, executed through NVivo 11, elucidated complex patterns within the literature on strategic cost management practices in Ghanaian PHEIs. A preeminent tool in qualitative research, NVivo proved indispensable in distilling salient themes (Hong, Gonzalez-Reyes, and Pluye, 2018). The word frequency tools embedded within NVivo were instrumental in revealing recurrent phrases and concepts, forming a bedrock for meticulous qualitative thematic analysis. The analytical journey commenced with an exhaustive familiarisation process, characterised by iterative readings that ensured intimate understanding of the data's nuances.

Following this foundational step, codes were methodically generated, encapsulating the data's significant features. These codes merged into primary themes, which were precisely aligned with the study's objectives. The thematic areas provide a comprehensive lens through which the cost management landscape in Ghanaian PHEIs was critically examined:

1. Existing Cost Management Practices: A critical exploration of current frameworks illuminated the operational strategies employed by PHEIs to effectively manage costs.

2. Challenges and Opportunities in Cost Management: This theme scrutinised the multifaceted challenges and opportunities, revealing the intricate factors influencing financial efficiency and institutional growth.

3. Best Practices and Innovative Approaches in Cost Management: A rigorous assessment of best practices unveiled innovative strategies that could enhance financial sustainability across PHEIs.

4. Implications for Institutional Performance: This theme established a direct correlation between strategic cost management and institutional outcomes, offering insights into the long-term sustainability of PHEIs.

Through this NVivo-assisted thematic analysis, deeper understanding of strategic cost management emerged, transcending superficial frequency counts to yield genuinely contextualised insights (Braun and Clarke, 2006).

Validity and Reliability

Triangulation serves as an effective approach to validate research findings, ensuring that the inferences drawn are robust and credible (Renz, Carrington and Badger, 2018). Incorporation of supplementary data from diverse sources further augmented the reliability of the study, converging on similar conclusions and thereby reinforcing the integrity of the research outcomes.

Analysis and Discussion

Analysis

Existing Cost Management Practices

PHEIs in Ghana face numerous challenges in managing costs while maintaining the quality of the education they provide. This section presents the analysis of the current strategic cost management practices used by these institutions based on qualitative reports, documents and the academic literature.

PHEIs' Budgeting Approach

The study highlighted budgeting as a fundamental strategic practice among Ghanaian PHEIs for efficient resource allocation. However, challenges like limited financial resources, deficient financial management systems and transparency issues hinder effective

implementation. Public universities in Ghana face similar obstacles, including inadequate financial data and restricted information availability, leading to suboptimal outcomes. Addressing these challenges requires significant investment in robust financial management systems and comprehensive staff training. Effective budgeting not only supports strategic objectives, but also improves operational cost efficiency. Transparent financial systems, skilled personnel and accurate data are essential for successful budget formulation and forecasting, ensuring financial sustainability and long-term success in PHEIs.

Table 5 reveals a continuous increase in education expenditure at PHEIs in Ghana from 2017 to 2021. The standard unit cost per student rose from GH₵ 4,791 to GH₵ 6,037 during this period. However, the actual unit cost consistently exceeded the standard unit cost, with variances ranging from GH₵ 2,272 to GH₵ 4,155. The percentage variance between the standard and actual unit costs also grew each year, reaching 69% in 2021. These findings indicate potential shortcomings in budgetary and planning systems that could impact the quality of education. To address this, PHEIs should undertake a comprehensive analysis of their cost structures, diversify funding sources, leverage technology for operational optimisation and proactively ensure the continued delivery of quality education.

Table 5: PHEIs Unit Cost Analysis

Year	PHEIs Students Enrolment	PHEIs Standard Unit Cost (Gh₵)	PHEIs Actual Unit Cost (Gh₵)	Variance (Gh₵)	% Variance
2017	448,756	4,791	7,063	(2,272)	(47)
2018	483,929	5,200	7,726	(2,526)	(49)
2019	517,569	5,447	8,614	(3,167)	(58)
2020	543,525	5,655	8,870	(3,215)	(57)
2021	565,877	6,037	10,192	(4,155)	(69)

Source: Author's Analysis of Data from the GMoE

PHEIs' Financial Reporting

The study underscored the critical role of financial reporting in Ghanaian PHEIs for cost management, regulatory compliance and financial oversight. Despite acknowledged concerns regarding accuracy, robust financial reporting facilitates informed decision-making in resource allocation and investment, thereby bolstering transparency in reporting to stakeholders such as governmental bodies and donors. Key financial statements like the balance sheet and cash flow statement offer essential insights, albeit potentially incomplete in capturing all revenue streams. Integrating financial reporting with strategic cost management strategies is essential to optimise resource allocation and achieve cost efficiencies while upholding educational excellence.

Table 6 provides an overview of Ghanaian PHEIs' financial performance from 2017 to 2021. These institutions consistently operated at a deficit, with a cumulative operating deficit of GH¢ 6 761 722 681. The deficit increased progressively, reaching a peak of GH¢ 1 923 896 933 in 2021. This indicates an unsustainable situation where expenditure exceeds earnings. The annual financial operating gap percentage, which measures the extent of the deficit, ranged from 34% to 53% over the five-year period, averaging 45%. On average, PHEIs spent 45% more than they generated in revenue. To address this financial challenge, they should focus on increasing revenue streams and reducing operating costs. Exploring alternative funding sources such as partnerships with private sector organisations or international entities could be a viable strategy. It is also essential to evaluate spending patterns and identify opportunities for cost reduction without compromising educational quality.

Table 6: Summary PHEIs' Financial Performance

Year	PHEIs Total Operating Income	PHEIs Total Operating Expenditure	Surplus/(Deficit)	% PHEIs Annual Financial Operating Gap
	GH¢	GH¢	GH¢	
2017	2 048 080 422	3 135 615 966	(1 087 535 544)	(53)
2018	2 761 343 353	3 686 439 158	(925 095 805)	(34)
2019	3 030 741 114	4 397 211 984	(1 366 470 870)	(45)
2020	3 319 759 621	4 778 483 150	(1 458 723 529)	(44)
2021	3 789 513 384	5 713 410 317	(1 923 896 933)	(51)
Total	**14 949 437 894**	**21 711 160 575**	**(6 761 722 681)**	**(45)**

Source: Author's Analysis of Data from the GMoE

Key Economic Indicators in Ghana (2017-2023)[1]

PHEIs' Resource Allocation Approach

The study emphasised the critical role of resource allocation in Ghanaian PHEIs' strategic processes, involving the distribution of funding, time, and personnel to achieve institutional goals. Effective allocation requires that resources be prioritised based on strategic importance and stakeholder needs, including students, faculty, and staff. However, some institutions struggle with resource allocation due to limited funding and conflicting priorities. Stakeholder engagement is vital to ensure that allocation decisions align with institutional objectives and meet diverse needs. In Ghanaian PHEIs, Full-time Equivalent (FTE) is commonly used to allocate educational costs, but it has limitations, assuming uniform resource needs across courses and neglecting non-academic services. Activity-based costing offers a more nuanced approach by

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Year	2017	2018	2019	2020	2021	2022	2023
Inflation Rate (%)	12.37	9.84	7.14	9.89	9.98	54.10	23.20
USD/GHS	4.42	4.82	5.25	5.61	5.82	8.45	11.16
EURO/GHS	5.30	5.50	5.87	6.44	6.87	8.82	12.08
GBP/GHS	5.97	6.11	6.72	7.25	8.00	10.30	13.92

Source: Bank of Ghana, Ghana Statistical Service

accounting for specific activity requirements and could enhance resource allocation accuracy, particularly for specialised courses. Adopting ABC and adjusting allocation methods based on student characteristics are suggested strategies to improve resource allocation in PHEIs.

PHEIs' Procurement Practices

The study found that procurement is a critical cost management practice for Ghanaian PHEIs, essential for obtaining goods and services at optimal prices while maintaining quality standards. However, issues in relation to the transparency and impartiality of procurement processes have led to unproductive expenditure and inefficiencies. A lack of transparency, inadequate controls and limited competition are significant challenges. Effective procurement practices should enhance transparency, competition and efficiency, and promote savings. Key strategies include competitive bidding, standardisation, and supplier relationship management. Despite the benefits, obstacles like resource constraints, skills limitations, and regulatory compliance challenges can hinder successful implementation.

PHEIs' Cost Control Practices

The study found that Ghanaian PHEIs commonly adopt cost control as a crucial approach to manage expenses and enhance financial sustainability. This involves identifying and eliminating unnecessary costs while maintaining service quality. However, implementing effective cost control measures faces several challenges, including inadequate financial management systems and a lack of a cost-conscious culture. Insufficient cost management policies and procedures further complicate these efforts.

To improve cost control, PHEIs should develop comprehensive cost management policies, promote a culture of cost consciousness, invest in staff training, enhance monitoring systems and implement accountability measures. These steps can help to ensure consistent and effective cost control, ultimately supporting financial sustainability and performance.

Challenges and Opportunities in Cost Management

The study's findings revealed that Ghanaian PHEIs face significant obstacles in strategic cost management. Financial constraints limit their capacity to invest in resources and infrastructure. Inadequate resources such as staffing and equipment further hinder effective cost management. The institutional culture, including resistance to change and a lack of awareness of the importance of cost management, poses additional challenges.

Effective strategic cost management presents numerous opportunities and benefits. It enhances financial sustainability by improving financial management and resource allocation and optimises the use of resources, leading to improved operational efficiency. It also enhances accountability by enhancing tracking and reporting of expenses, which can improve the institution's public image and reputation.

Best Practices and Innovative Approaches in Cost Management

Ghanaian PHEIs currently encounter considerable financial hurdles, calling for the implementation of effective cost management approaches. This section outlines several best practices and innovations that these institutions can adopt to tackle their financial challenges and uphold the quality of education they offer.

Utilising Technology

The research showed that Ghanaian PHEIs are increasingly turning to technology to address financial challenges. They leverage virtual learning environments, digital libraries and online platforms to minimise physical classroom requirements, and reduce building maintenance costs and expenses related to textbooks. This enhances the efficiency of course delivery and improves students' access to learning material, regardless of time or location.

The University of Cape Town (UCT) in South Africa provides a notable example of effective technology integration. Through its "ICTS for Teaching and Learning" initiative, it offers faculty and students virtual environments, e-books, and online resources. This approach reduces

dependence on physical textbooks and classroom space. Moreover, UCT's adoption of an enterprise resource planning (ERP) system enhances administrative efficiency, leading to cost savings. Collaboration with technology companies and other universities further drives innovations such as open educational resources, underscoring UCT's leadership in enhancing cost management and education quality across African HEIs.

Collaboration

The study's results stressed that collaboration among HEIs is essential to achieve cost savings and operational efficiency. By pooling resources such as facilities, equipment and personnel, institutions can avoid duplication of efforts and capitalise on economies of scale. This collaborative approach not only reduces costs, but also stimulates the development of new academic programmes and research initiatives, thereby enhancing overall academic quality. For instance, partnerships like shared research facilities in fields such as biotechnology or environmental science can lead to significant savings and improved research capabilities. Initiatives similar to Australia's Victorian Life Sciences Computation Initiative (VLSCI), where universities share high-performance computing resources, illustrate how such partnerships generate financial savings and expand research capacities. Therefore, promoting collaboration among HEIs is a promising strategy for effective cost management and academic excellence.

Efficient Budgeting

The results emphasised that efficient budgeting is essential for HEIs to manage costs and allocate resources to priority core activities. This ensures that resources are directed towards critical initiatives while minimising expenditure on less essential ones. By adopting a performance-based budgeting model, institutions link budget allocations directly to measurable performance outcomes. This promotes accountability and transparency in resource allocation decisions, requiring institutions to justify how funds support strategic objectives. For example, the University of Dar es Salaam in Tanzania has successfully implemented performance-based budgeting, enhancing its ability to allocate resources strategically and reduce costs. This approach

not only demonstrates institutional accountability to stakeholders, but also improves academic standards by aligning financial decisions with performance metrics. Efficient budgeting practices, including prioritisation and performance linkage, are essential for HEIs seeking to optimise resource utilisation and enhance operational efficiency while maintaining fiscal responsibility.

Streamlining Administrative Processes

The study highlighted the critical importance of efficient budgeting in HEIs to manage costs effectively and prioritise core activities. A performance-based budgeting model aligns allocations with measurable outcomes, enhancing accountability and transparency in resource allocation. This requires institutions to justify fund usage for strategic objectives while optimising resource allocation. Efficient administrative processes are crucial for cost management in HEIs, improving efficiency and reducing expenses by automating tasks such as record-keeping, payroll, and procurement. Digital workflows enhance accuracy and timeliness, exemplified by our success at the Catholic University of Ghana with an electronic billing system that reduced processing times from 30 to two days, cutting labour costs and enhancing operational efficiency. This demonstrates technological advancements' potential to achieve significant savings and operational improvements while promoting transparency and accountability in administrative tasks.

Increasing Revenue Streams

The findings stressed that HEIs must diversify their revenue sources to reduce budget constraints and decrease dependence on government financing. Strategies such as securing research funding, forming partnerships with the private sector, soliciting donations and offering tailored short courses and non-degree programmes can generate additional revenue. These approaches not only bolster financial stability, but also create opportunities for faculty, students, and industry engagement.

Managing Staffing Costs

The study concluded that HEIs must manage staffing costs effectively for financial sustainability. Strategies like hiring part-time or contract workers and automating administrative tasks with technology can help

achieve this goal. Hiring part-time or contract workers offers flexibility and cost savings while ensuring fair compensation and compliance with labour regulations. Automating administrative processes boosts productivity and reduces staffing needs, but it is crucial to maintain instructional and service quality. Cost-cutting measures should be fair to prevent disproportionate impacts on marginalised employees.

Georgia State University (GSU) and the University of Central Florida (UCF) have successfully controlled staffing costs through strategic initiatives. Georgia State University's "Student Success" programme reduced the number of administrative staff while improving academic advising and student support with technological advancements, leading to higher graduation rates and fewer student dropouts. Similarly, the UCF implemented a hiring freeze, increased use of part-time faculty, and a voluntary retirement programme to maintain budget stability without compromising educational quality and student services.

Prioritising Asset Management

The analysis stressed the importance of effective asset management for financial sustainability in HE. Regular audits identify underutilised or unnecessary assets, allowing institutions to optimise resource allocation. Asset tracking systems and holding staff accountable ensure efficient utilisation. Responsible disposal of assets can free up resources for critical needs, while leasing or renting equipment offers cost savings and access to the latest technology without long-term commitments.

The University of California, San Diego (UCSD), and the University of Wisconsin-Madison exemplify successful asset management programmes. The UCSD's initiative focused on equipment and facilities optimisation, resulting in annual savings of $5 million. The University of Wisconsin-Madison achieved $4 million in savings within a year through comprehensive asset audits and tracking systems. Both institutions effectively reduced unnecessary spending and redirected resources to support their core educational missions. Prioritising asset management enables institutions to enhance financial efficiency and maintain high-quality education and services.

Table 7 below summarises the various strategies arising from the analysis.

Table 7: Revenue and Cost Management Measures

Cost Area	Cost Management Strategies
Utilising Technology	Leveraging virtual environments to reduce physical infrastructure and textbook costs.
Encouraging Collaboration	Pooling resources to avoid duplication and achieve economies of scale.
Adopting Efficient Budgeting	Implementing performance-based budgeting to link allocations with outcomes.
Streamlining Administrative Processes	Automating tasks to enhance efficiency and reduce labour costs.
Managing Staffing Costs	Hiring part-time or contract workers to reduce staffing expenses.
	Automating administrative tasks.
Prioritising Asset Management	Conducting audits and optimising the use of existing assets.
Monitoring and Evaluating Cost Management Approaches	Systematic tracking and evaluation of financial performance.
Engaging Stakeholders	Involving stakeholders in decision-making to foster a cost-conscious culture.
Developing a Cost Management Plan	Creating a comprehensive plan that includes efficiency measures and resource optimisation.
Revenue	**Revenue Optimisation Strategies**
Increasing Revenue Streams	Securing research funding.
	Forming private sector partnerships.
	Offering tailored short courses and non-degree programmes.

Source: Research Analysis

Monitoring and Evaluating Cost Management Approaches

The study's results revealed that it is essential for HEIs to monitor and evaluate cost management approaches. Implementing robust systems allows institutions to systematically track and assess their financial performance, evaluate the efficiency of cost management practices, and pinpoint areas for improvement. This comprehensive approach

ensures that resources are optimally allocated and enables evaluation of the effectiveness of cost-saving measures. Various methodologies are employed by HEIs, including regular financial reporting, audits, analysis of budget variances, and assessment of cost-saving impacts. These practices help institutions to proactively identify potential cost overruns, uncover operational inefficiencies and make informed decisions to enhance resource allocation and improve cost management strategies.

Engaging Stakeholders

The study indicated that effective cost management requires HEIs to engage stakeholders. Actively involving stakeholders in decision-making fosters transparency, accountability and a sense of ownership within the institution. Establishing clear communication channels and facilitating interactions such as meetings and consultations are crucial for effective engagement. These platforms enable stakeholders to contribute their opinions, identify cost-saving opportunities, and align cost management with institutional goals. Stakeholder engagement also raises awareness of financial challenges, promoting a culture of cost-consciousness and dedication to effective cost management. Moreover, stakeholders' insights and suggestions can optimise resource allocation and improve operational efficiency within HEIs.

Developing a Cost Management Plan

The study's results emphasised the need for African HEIs to develop a comprehensive cost management plan to achieve their objectives. This strategic framework enables institutions to efficiently manage financial resources and address unique challenges in a cost-effective manner. It includes strategies such as efficiency measures, streamlined processes, technology adoption and exploring alternative revenue streams. By implementing these strategies, HEIs can enhance financial viability and resource management. The plan also defines the roles and responsibilities of stakeholders, including administrators, faculty, finance personnel, and governing bodies. Their expertise and efforts make a significant contribution to achieving cost management goals. Beyond financial benefits, the plan promotes transparency, accountability, informed decision-making and alignment with strategic objectives. Through systematic implementation, institutions can strike a balance between

cost reduction and maintaining or improving education and services for students and stakeholders.

Implications for Institutional Performance

The study showed that cost management practices wield a profound influence on the institutional performance of Ghanaian PHEIs. Institutions that adeptly manage their costs through rigorous strategic planning and judicious resource allocation are more likely to attain enhanced financial sustainability and superior operational outcomes. Conversely, those with suboptimal cost management practices face heightened risks of financial instability, which can severely impede their growth and developmental trajectories. The study thus accentuates the indispensable role of effective cost management in fostering robust institutional performance, thereby establishing a clear and critical linkage between these domains.

Discussion

The analysis of strategic cost management practices within Ghanaian PHEIs offers significant insights into the current landscape and its implications for financial sustainability and institutional performance. These institutions employ various strategic cost management practices, including budgeting, financial reporting, resource allocation, procurement and cost control (Benner, Grant and O'Kane, 2022). However, these practices are often hampered by challenges such as limited financial resources, inadequate financial management systems, and transparency issues (Sheikh, Chandler, Hussain and Timmons, 2022).

Budgeting is critical for PHEIs in Ghana, yet its effectiveness is hindered by resource constraints and transparency issues (Tsyhaniuk and Akenten, 2021). Insufficient financial data leads to suboptimal outcomes, necessitating investment in robust financial systems and staff training for better planning and forecasting (Al-Filali, Abdulaal, Alawi and Makki, 2024). Financial reporting remains fundamental despite concerns about accuracy, impacting resource allocation and accountability (Jongbloed and Vossensteyn, 2016) and thus serves as a cornerstone for informed decision-making and cost reduction strategies.

Resource allocation in Ghanaian PHEIs involves balancing strategic priorities amidst limited funding and conflicting needs (Newman and Duwiejua, 2015). Although FTE methods are transparent, they overlook resource disparities; hence, ABC is suggested for accurate resource allocation (Olariu and Brad, 2022). Procurement practices are crucial to obtain goods efficiently, yet challenges like transparency and competition persist (Hasanah, 2024). Enhancing procurement efficiency through competitive bidding and supplier management is essential amidst resource constraints (Porter, 2008).

Cost control strategies are vital for financial sustainability, but their effectiveness is hampered by inadequate financial systems and the organisational culture (Finne, Haga and Sundvik, 2023). Establishing comprehensive policies and promoting a cost-conscious culture are vital for effective implementation (Ameen, Ahmed and Abd Hafez, 2018). Ghanaian PHEIs face significant challenges in strategic cost management, including financial constraints and cultural barriers (Hayward, 2020). However, effective practices offer opportunities for improved efficiency and accountability (Torneo, 2020).

The study's findings provide actionable insights for Ghanaian HEIs to enhance financial sustainability. Key strategies include investing in robust financial systems and staff training to improve budgeting accuracy and financial reporting. Implementing ABC for efficient cost allocation and transparent procurement practices could achieve cost savings and operational efficiency. Cultivating a cost-conscious environment through ongoing staff training is crucial for effective cost control, providing a comprehensive framework to maintain high educational standards amidst financial challenges.

Conclusion

The study underscores the critical importance of robust cost management practices for Ghanaian PHEIs, emphasising effective budgeting and financial reporting. Despite limited resources, inadequate systems and transparency issues leading to a 45% overspending rate, there are clear pathways for improvement. Key recommendations include investing in advanced financial management systems, staff training, exploring diverse funding sources, optimising operations with technology and

ensuring continuous education delivery. Drawing on best practices from institutions in Nigeria, Ghana, Scotland and Belgium, the study highlights the efficacy of efficient budgeting, streamlined processes, collaboration and technology adoption. Monitoring, evaluation and comprehensive planning are essential for success. Future research should focus on identifying effective approaches and the factors influencing their adoption. Policymakers, administrators and stakeholders must be actively involved and capacity-building programmes are crucial to enhance skills and knowledge. These strategies would collectively advance cost management in Ghanaian PHEIs and similar contexts in developing countries.

Contribution to Theory and Practice

The study's key contributions include:
Current Cost Management Practices (RQ1): Ghanaian PHEIs employ diverse strategies to enhance operational efficiency and ensure financial sustainability. These include detailed annual budgets and financial plans for judicious resource allocation, cost monitoring and control across various domains, optimal utilisation of faculty, facilities, and administrative staff and competitive tuition structures. Transparent financial reporting systems track expenditure and revenue, ensuring accountability.

Challenges and Opportunities (RQ2): Significant challenges include limited access to funding and loans, regulatory and accreditation cost pressures, substantial infrastructure maintenance costs and the need for competitive faculty and staff compensation within tight budgets. Opportunities for improvement include leveraging technology for administrative efficiency, forging strategic industry and government partnerships, diversifying revenue streams through innovative programmes and refining student recruitment and retention strategies.

Best Practices and Innovative Approaches (RQ3): Recognised best practices include embracing lean management principles to streamline operations, outsourcing non-core activities and adopting sustainable practices. These approaches reduce costs and improve operational efficiency. Offering robust financial aid and scholarships attracts and retains talented students, enhancing institutional stability and academic excellence.

Impact on PHEI Performance (RQ4): Effective cost management significantly enhances the performance of Ghanaian PHEIs by ensuring sustainable revenue generation and controlled expenditure, supporting faculty development, research and student services. Strategic resource allocation improves academic quality and competitiveness. Transparency and accountability in fulfilling stakeholder expectations bolster institutional credibility and trust.

Suggestions for Future Research

It is essential to study the impact of cost structures on education quality in Ghana's PHEIs. Researchers could evaluate cost components, propose strategies for cost reduction while maintaining quality and consider external factors like government policies and funding. Future research could also assess the effects of innovative cost management approaches such as technology integration, streamlined processes, collaboration and diversified revenue streams on the financial sustainability and effectiveness of Ghana's PHEIs. This evaluation, considering benefits, challenges and impact on education quality, would guide the implementation of effective cost management strategies to optimise resources and enhance financial sustainability. Lastly, future inquiries could assess the effectiveness of alternative funding sources like grants, partnerships and fundraising in improving financial sustainability among Ghana's PHEIs. Analysing their benefits, challenges and impact on education quality would inform decisions regarding diversifying funding streams and ensuring long-term financial stability in the sector.

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Embarking on a Research Odyssey: Factors Influencing Students' Experiences of Successfully Completing a Research Project

Willy Hannes Engelbrecht and Shamola Pramjeeth

Abstract

Honours research plays a pivotal role in shaping individual academic careers, contributing to a nation's collective knowledge reservoir and motivating students to undertake Masters and doctoral studies. This study identified the critical factors that enable students to successfully complete research projects. The positivist philosophical framework informed the quantitative research methodology employed at a private higher education institution in South Africa. Simple random sampling was used to select a sample of 172 students registered for NQF 8 programmes at the institution. Data were collected anonymously using an online questionnaire. Exploratory factor analysis, Pearson's correlation and regression analysis were employed for statistical analysis. Four factors were identified: an enabling supervisor, constructive feedback, the research process, and support and guidance. The study found that successful completion of the research component of an honours degree depends on the expertise, support, and guidance provided by the supervisor throughout the research process.

Key words: constructive feedback, research project, research process, supervision, student experience, student support, private higher education

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Résumé

Les travaux de recherche de fin d'études jouent un rôle essentiel dans l'orientation des carrières universitaires individuelles, contribuent au réservoir de connaissances collectives d'une nation et motivent les étudiants à entreprendre des études de maîtrise et de doctorat. Cette étude a identifié les facteurs critiques qui permettent aux étudiants de mener à bien leurs projets de recherche. Le cadre philosophique positiviste a guidé la méthodologie de recherche quantitative employée dans un établissement d'enseignement supérieur privé d'Afrique du Sud. Un échantillonnage aléatoire simple a été utilisé pour sélectionner un échantillon de 172 étudiants inscrits à des programmes NQF 8 dans l'établissement. Les données ont été collectées de manière anonyme à l'aide d'un questionnaire en ligne. Une analyse factorielle exploratoire, une corrélation de Pearson et une analyse de régression ont été utilisées pour l'analyse statistique. Quatre facteurs ont été identifiés : un superviseur stimulant, un retour d'information constructif, le processus de recherche et le soutien et l'orientation. L'étude a montré que la réussite de la composante recherche d'un diplôme de spécialisation dépend de l'expertise, du soutien et de l'orientation fournis par le superviseur tout au long du processus de recherche.

Mots clés : retour d'information constructif, projet de recherche, processus de recherche, supervision, expérience des étudiants, soutien aux étudiants, enseignement supérieur privé

Introduction and Research Problem

The attrition rates of doctoral programmes in South Africa are concerning, fluctuating between 19% and 22% within the first three to five years of studying (CHE, 2022). The low completion rates are influenced by various institutional and external factors like funding, employment, experienced supervisors, supervision capacity, and academic and personal student support (DSI, 2022). One could argue that these candidates did not gain an understanding of the academic depth and rigour required for a research thesis from the foundation years of the Bachelor's Honours degree to the Master's and ultimately the doctoral degree. The National Qualifications Sub-Framework Level 8 (NQF 8) requires students to actively participate in the completion of

a minor research project under the supervision of a discipline expert whilst registered for an Honours degree (CHE, 2013). Critical research components must be instilled at the undergraduate level and further developed in NQF 8 programmes, increasing candidates' chances of successfully completing a Masters and doctoral degree (Barwick and Horstmanshof, 2022; CHE, 2013; Malcolm, 2020). Students require a holistic understanding of the research process through the application of knowledge and skills (CHE, 2022). Galpin et al. (1999) and the Council on Higher Education (CHE) (2013) note that adequate research skills and competencies are taught and applied throughout the completion of a research project in NQF 8-level programmes.

Higher education institutions (HEIs) in South Africa must ensure that all the NQF 8 honours programmes they offer include a discipline-specific research project with a minimum of 30 credits as part of the graduation criteria (CHE, 2013). The purpose of an NQF 8 honours programme is to "deepen students' expertise in a particular discipline and to develop research capacity in the methodology and techniques of that discipline" (CHE, 2013, p. 34). The latter can only be achieved if HEIs provide adequate academic research support such as training on academic writing, research methodology, sourcing literature in libraries and online databases, and research ethics. Supervisors also need to be capacitated to provide individualised support to students (Riley and Spurling, 2023; Galpin et al., 1999). It is, therefore, important to understand students' experience of navigating the research process (Kumar et al., 2021).

Although NQF 8 research requires some form of independence among students, the inquiry-based learning pedagogy and students' research experience are influenced by multiple factors that can impact project completion (Kumar et al., 2021). Our study aimed to identify the critical factors impacting students' ability to successfully complete research projects.

Literature Review

South Africa, a nation distinguished by its rich diversity and vibrant academic landscape, stands at a critical juncture in the realm of

postgraduate research. Amidst the dynamic tapestry of research endeavours that span disciplines and institutions, it is the realm of honours research that often serves as the cornerstone for the country's intellectual and innovative future (Cekiso, Tshatsho, Masha, and Saziwa, 2019; Mhlahlo, 2020). The factors affecting postgraduate research supervision become evident when investigating the journey of a student completing an honours research project. Honours research represents a pivotal stage in the academic journey of South African students, offering them a bridge between undergraduate and postgraduate studies (Badat, 2015; Matsiliza, 2022; Okeke-Uzodike, 2021). However, this crucial phase can be beset by challenges that may impede their progress and success.

Student-Specific Challenges

Most NQF 8 qualifications in South Africa are accredited and registered at a minimum of 120 credits, requiring students to complete the programme within one academic year (CHE, 2013). The four-year Bachelor programmes (accredited at 480 credits) within the South African framework are pitched at NQF8 and include a research project at 30 credits as required by the CHE. The research component in postgraduate programmes from NQF8 onwards is often the reason why students do not successfully complete the qualification within the required time (Barnard and Jackson, 2023; Marnewick and Pretorius, 2016; Sonn, 2016). The honours qualification is extremely demanding, given the jump from undergraduate to postgraduate studies where more self-study and independence are required. This impacts the quality of the research projects and places undue pressure on students and supervisors. Furthermore, the honours research component is independent and self-directed (CHE, 2013), unlike undergraduate degree modules where the supervisor is significantly involved in supporting and guiding the student through the research process. Many students may not adapt to this transition, which could result in feelings of isolation, stress, anxiety and apprehension and in turn, failure to adequately manage their time (Cruwys et al., 2015, Johnston and Broda, 1996; Kumar et al., 2021). Barnard and Jackson (2023) noted that students' incapacity to dedicate time to research contributes to non-completion. Given that the honours research project is independent and self-directed, Devos (2015) supports

Deci and Ryan's (1985; 2000) assertion that supervisors who support student autonomy, based on the Self-Determination Theory (SDT) in the classroom and are involved in their studies and personal well-being enhance student motivation and learning outcomes. This can assist in addressing students' challenges like stress, anxiety, fear and loneliness as they navigate the research process.

South Africa's multilingual context, with 12 official languages (including South African sign language) overlooks resident foreign nationals' languages, which may pose language challenges for students, educators and supervisors (Desai, 2016; Ferreira-Meyers et al., 2017; Nomlomo and Katiya, 2018). Language differences can hinder effective communication, interpretation of feedback, comprehension of research material and dissemination of research findings. In the context of this study, the language differences between the supervisor and the student can affect interpretation of feedback, research project outcomes (Heugh, 2002) and the supervisor-student relationship (Ferreira-Meyers et al., 2017).

Annual fee increases and student debt place financial constraints on students and their households (Tankou et al., 2019; van der Merwe, 2022), as they are unable to adequately support their higher educational needs (CHE, 2016). Tuition fees at private higher education institutions (PHEIs) are sometimes comparable to public institutions, but may be higher (Admin, 2022; James, 2023). Students wishing to study at a PHEI in South Africa are not eligible for government student funding, which adds to financial stresses (James, 2023; NFSA, 2018). In addition, the increased cost of living, which often forces students to work part-time, diverts their attention and energy from their studies, especially the research project. Shange (2018) found that financial constraints negatively impact student academic performance, while Barnard and Jackson (2023) established that a lack of funding has a direct impact on completion rates.

In addressing the multifaceted challenges facing honours students, it is essential to establish a vibrant and inclusive research ecosystem. By increasing investment in resources and training, enhancing mentorship and supervision, and implementing policies and guidelines on postgraduate research to mitigate stress and anxiety, South Africa

can unlock the full potential of its supervisors and students. Moreover, recognising the importance of language support and fostering supervisory relationships will contribute to a more equitable and successful honours research experience for students, ensuring the nation's intellectual growth and development.

Guidelines on Postgraduate Supervision

Stynes and Pathak (2022) note that rising postgraduate student enrolment has increased the supervisor workload, compromising the quality of research and supervision. This calls for a review of the apprenticeship-supervision model. In order to facilitate student learning, Marnewick (2020) proposes a structured, multifaceted approach to supervision that incorporates peer learning, individual supervision, self-learning, and current teaching techniques, while Bitzer and Albertyn (2011) recommend group or co-supervision. Stynes and Pathak (2022, p. 398) developed a supervision framework that incorporates "teaching practices, timetabled group supervision, co-supervision, scaffolding and coaching" and found that it increased their students' research success rates. However, Crossouard (2008) emphasises the importance of clear guidelines on key roles and responsibilities to ensure quality supervision, support for novice supervisors and management of workloads to ensure a good student research experience.

Clear protocols and policies on supervision and how to conduct research clarify the expectations and requirements of postgraduate supervision and research (Kimani, 2014). However, Tangen et al. (2019) posit that many South African HEIs lack sufficient guidelines for supervisors and students, while Van Rensburg et al. (2016) note that the scope and requirements of the research project must be clearly documented. Many supervisors depend on their own experience when supervising (Doloriert et al., 2012; Guerin et al., 2014; Muda et al., 2019) and rely on research material, research supervision seminars and fellow supervisors for guidance (Malik and Malik, 2015). As a result, inexperienced supervisors frequently unintentionally pass the errors and unfair procedures they might have been exposed to on to their students. This may lead to tension in the supervisor-student relationship, with a detrimental effect on research supervision and completion (Vereijken et al., 2018).

Brown and Atkins (1986 cited in Muda et al., 2019: 770) listed supervisory roles and responsibilities which Muda et al. (2019, p. 771) added to. These include "director, facilitator, adviser, mentor, guide, critic, supporter, friend, manager, listening/clarifying, encouraging, presenting/demonstrating, negotiation/problem-solving, standardising and reinforcing". The authors advise that, in the first stage, the supervisor listen/clarify, advise, encourage and present/demonstrate as the student commences the research process and develops his/her research proposal. In the second stage, where the student begins to conduct research, the supervisor plays more of a negotiator/problem-solver, directive role in order to enable the student to undertake the research based on the proposal while also serving as a mentor, critic, guide, supporter and friend. In the final stages, the supervisor ensures standardisation and plays a reinforcing role as the student begins to analyse and interpret the data. Here, the friend and supporter roles serve to motivate the student to complete his/her work.

Supervisory Relationship

Traditionally, supervision occurs in a personal setting with a close relationship between the supervisor, who is presumed to be the expert in the discipline or field of study and in research, and the student. The supervisor transmits knowledge to the student, who is the learner and lacks expertise in the field of study (Bastalich, 2017; Wood and Louw, 2018). The supervisor is expected to provide subject matter knowledge, guidance on how to conduct research, support and constructive feedback on work submitted (Rauf, 2016). The feedback is often expected to be detailed and written in the document or as notes (Jili and Masuku, 2017).

Most students appreciate this feedback and engage with the supervisor while working through the commentary to better understand it. Should a student not receive constructive, detailed feedback and have one-on-one engagements with his/her supervisor, the supervisor might be perceived as disengaged and disconnected from the research (Tlalli, 2022). In contrast, if the supervisor offers comprehensive critique on a consistent basis, the student may perceive it as a personal assault and begin to see the research project as a roadblock (Tlalli, 2022). Thus, a poor research supervision process can harm a student's mental health, resulting in a

lack of motivation, anxiety and inability to finish the degree (Corner et al., 2017).

However, the student plays a key role in this relationship. He/she needs to ensure he/she honours the agreement reached with the supervisor by attending supervision meetings, meeting submission deadlines, ensuring that submissions are of good quality, engaging adequately with the feedback provided and communicating any challenges to the supervisor (Jili and Masuku, 2017; Rauf, 2016; Tlalli, 2022). A breakdown in the relationship will result in frustration, anger, anxiety and even failure to complete the research project. Madikizela-Madiya and Atwebembeire (2020) note the importance of setting regular meetings at a place and time that is convenient to both parties. They further note the importance of keeping to the agreed times and building a relationship based on trust, compassion, and support. Kumar et al. (2021) emphasise that the supervision experience may differ across disciplines based on the supervisor's experience, skills, the nature of the research and discipline requirements. Henry and Weber (2010) add that students have different levels of research skills, emotional requirements, attention and engagement; hence, supervisory approaches will need to be adjusted accordingly. Vansteenkiste et al. (2004; 2010) and Deci and Ryan (2000) highlight the role of competence in enhancing student motivation. As students develop competence in research processes under the guidance of their supervisors, their motivation and commitment to persevere and succeed will increase. Thus, the role of the supervisor cannot be underestimated.

Mentorship and Supervision

Effective supervision is pivotal in guiding students through their research projects. Chikte and Chabilall (2016) describe effective supervisors as supportive, empathetic and willing to provide continuous and timeous feedback while serving a mentorship role within set boundaries. Davis (2019, pp. 1220-1232) shares similar sentiments highlighting "approachability, accessibility, interest, respect, commitment, communication, mentorship, and experience". Students are social beings, and their motivation is influenced by the quality of their relationships with others, their feeling of acceptance and their sense of

purpose (Deci and Ryan, 2000; Gunasekare, 2016). In support of students being social beings, Devos et al. (2015), supported by Vansteenkiste et al. (2010) and Stroet et al. (2013) identify three social environmental aspects that could hinder a student's motivation: controlling or coercive supervisor behaviour, a disconnected and disengaged supervisor, and a supervisor who is careless and unconstructive in his/her feedback on student work. The authors highlight that supportive interpersonal relationships between supervisor and student foster intrinsic motivation and overall student well-being.

Chikte and Chabilall (2016) highlight the significant increase in the number of postgraduate students, with the opposite being the case for experienced supervisors at HEIs. This may be due to a lack of adequate supervisor capacity development programmes (Mhlahlo, 2020) or, as Maistry (2017) suggests, a lack of competent supervisors to support students through the research process. Maistry (2017) further notes that as HEIs begin to increase their supervision pool, having novice supervisors supervise students can be a double-edged sword. Inexperienced supervisors frequently find themselves caught between the need to learn how to teach the craft of research to their students while simultaneously learning how to perform research as apprentices (Maistry, 2017; McCulloch and Loeser, 2016). The process of teaching and learning research supervision can be very challenging and intimidating for both the student and supervisor (Van Rensburg et al., 2016; Vereijken et al., 2018), which can result in students feeling adrift and unsupported, while supervisors feel anxious and lack confidence, resulting in research projects not meeting the required academic rigour and standards. Calma (2014) asserts that HEIs are failing to adequately prepare and build supervisor capacity.

Research Design and Methodology

The aim of this study was to determine the key factors relating to capacity development for supervisors to ensure that fourth-year students successfully complete their research projects. Since the focus was the student experience and building supervisor capacity, student demographics were not considered important. The study focused on the location of the campus, the discipline each student was registered in and the mode of programme delivery.

The study followed a positivist research philosophy with a quantitative research methodology. A self-administered online questionnaire with a 3-point Likert scale was employed to determine students' level of understanding of the key constructs of the research process. The questionnaire consisted of two sections. Section one focused on institutional-specific information, including the school that hosts the programme, the site and mode of delivery, and the qualification for which the student was registered. Section two used a 3-point Likert scale of agreement to assess students' experience and understanding of the research process.

The research population consisted of all students enrolled in an NQF 8 programme at a PHEI where a full research project of 30 credits is required as part of the programme's exit level outcome. Simple random sampling was applied to the population of 1 242 students registered for programmes meeting the research requirement. With a 95% confidence level and a margin error of 5, the target sample size was 294 completed online questionnaires. Only 172 (a 59% response rate) were obtained from the target population, which was below the general norm. However, Daikeler et al. (2021) note that the response rate for an online survey averages around 36%, while Fosnacht et al. (2017) indicate that for samples of less than 500, a 20-25% response rate is acceptable. The online questionnaire was administered during October 2023, which was during the students' final summative assessment preparation phase. The data was collected using Microsoft Forms over a four-week period. The link to the questionnaire was distributed via email to the students by the PHEI's information technology division. Students only accessed the questionnaire once they consented to participate in the online survey. Due to a low response rate, a follow-up request to participate was sent to the students on their mobile devices via SMS. The response rate did not, however, increase. Ethical clearance for this study was obtained from the specific HEI[1].

The data was exported from Microsoft Forms to Microsoft Excel and transferred into SPSS (2022) for statistical analyses. The basic demographic details of campus location, mode of study, and programme

1 Ethics Clearance Reference Number: R.000146

were analysed through descriptive statistics. Inferential statistics were applied for more advanced statistical analysis in the form of exploratory factor analysis, factor correlation and regression analysis. The exploratory factor analysis of the 27 variables was performed using the Oblimin rotation with the Kaiser normalisation test to determine the key factors that influenced the student experience during completion of a research report at NQF 8 level. It identified four factors, which were labelled according to the variables (see Table 1). The eigen values present the total variance by each factor (Shrestha, 2021). The factors all had acceptable average variance extracted (AVE) values ranging from 0.63–0.72, supported by composite reliability (CR) values which ranged from 0.90–0.94. The AVE assesses the convergent validity of the variables measured in this study. Convergent validity was obtained by calculating the factor loadings, AVE and CR (Shrestha, 2021).

The Cronbach Alpha of the four factors ranged from 0.90–0.94, whereas the Cronbach Alpha of the variables ranged from 0.64–0.72. The Cronbach Alpha, AVE and CR analysis confirmed instrument validity and the reliability of the data collected (see Table 1). A Pearson's correlation matrix exposed the significant relationships that exist between the four identified factors (Creswell, 2014:12; Malhotra, 2007) (see Table 2). The factor scores were used to assess the relationship and establish significance. Lastly, regression analysis was performed to test H_0 which stated that there exists a direct positive relationship between an enabling supervisor and a student successfully completing a research report at NQF 8 level.

Findings and Discussion

The purpose of this study was to understand students' supervisory experience during the 2023 academic year by identifying the critical factors impacting their ability to successfully complete their research projects. This section reports the location and discipline areas where students registered for programmes, modes of delivery, the exploratory factor analysis, Pearson's correlation and regression analysis. Due to the nature of this study, the specific names of faculties and schools are not included.

A total of 163 (94%) respondents were registered for the contact mode, of which 79% (135 respondents) were full contact and 16% (28 respondents) were part-time. Only nine respondents (5%) were registered for the distance mode of delivery. Respondents who completed the survey were registered across various disciplines, including Psychology (39%), Management (17%), Communication (13%), Law (12%), Social Sciences (6%), Information and Communication Technologies (5%), Education (5%), Health (2%) and Design (1%). The majority were registered with campuses in the Gauteng Province (90%), followed by KwaZulu-Natal (7%) and the Western Cape (3%). Table 1 shows the four factors identified, including the variables supported by the factor loadings of the factors and variables. The mean values, Cronbach Alpha, AVE and CR are included in the table.

Table 1: Exploratory Factor Analysis and Relatability

Factor Items	Factor Loading	Mean	Standard Deviation	Cronbach Alpha	Average Variance Extracted (AVE)	Composite Reliability (CR)
Factor 1: Enabling Supervisor		**4,04**	0.93	0.94*	0,63	0,94
The supervisor is approachable and committed to my success.	0,83					
The supervisor motivated and supported me throughout my research journey.	0,84					
The supervisor engaged with me on a regular basis (once every 14 days) to check on my progress.	0,73					
The supervisor attends all mutually agreed-upon consultation sessions and has informed me in advance if they need to reschedule consultation sessions.	0,64					
The supervisor consultation sessions were in a conducive environment, and we could share and debate research approaches, ideas, and feedback.	0,80					
The supervisor provided me with guidance in terms of planning, organising, and managing the submission points of my research project.	0,87					
The supervisor assisted me with the topic/title generation.	0,70					
The supervisor demonstrated how the title of the study must link to the problem statement, research objective(s) and research purpose.	0,79					
Factor 2: Constructive Feedback		**3,91**	**1.07**	**0.94***	**0,71**	**0,94**
The supervisor provided me with constructive feedback on the work submitted.	0,87					
The supervisor provided me with detailed guidance on how to effectively implement the feedback.	0,84					
The supervisor provided feedback on the appropriateness of my academic discourse and academic registers, such as language, punctuation errors and referencing.	0,81					
The supervisor provided feedback on the quality of the academic sources used.	0,80					
The supervisor provided feedback within a reasonable time as per our memorandum of understanding.	0,74					
The supervisor reviewed all draft submissions and provided detailed feedback.	0,83					
The supervisor guided me and provided constructive feedback in the development of the research instrument.	0,79					
Factor 3: Research Process		**3,67**	**1.15**	**0.94***	**0,72**	**0,94**
The supervisor provided samples of how to structure a clear research concept document.	0,87					
The supervisor provided me with samples on how to conduct a literature review.	0,87					
The supervisor demonstrated how to integrate the research problem, research objectives and theoretical framework into the literature review.	0,87					
The supervisor provided me with a sample of what a good proposal should cover.	0,85					
The supervisor explained how the research instrument must address the research question and incorporate the theoretical framework noted in the literature review.	0,77					
The supervisor explained the importance of ethical clearance, the process and the relevance of ethics to the research project.	0,68					

Factor 4: Support and Guidance		3,69	1.13	0.90**	*0,65	0,90
The supervisor provided me with relevant support and guidance on the appropriate selection, application and interpretation of the research methodology for the study.	0,81					
The supervisor provided adequate support and guidance in preparing for the proposal presentation.	0,80					
The supervisor shared the relevant ethical clearance documentation with me and supported me with the completion of the relevant documentation.	0,72					
The supervisor shared insightful readings, links and work that support my study.	0,77					
The supervisor referred me to the library for further support on the collection of literature and applying the relevant academic referencing style.	0,67					

Interpretation of Cronbach Alpha's: *ά ≥ 0.9 = Excellent; **0.9 >ά ≥ 0.8 = Good (Shrestha, 2021)

Interpretation of AVE: AVE ≥ 0.5 and CR: 0.6 ≥ 0.7 confirm convergent validity (Shrestha, 2021)

Factor 1: Enabling Supervisor

Factor 1 was labelled *Enabling Supervisor* and was the most important factor that influences students' experience of completing their research project. This factor has a mean value of 4.04, a Cronbach Alpha of 0.94, an AVE of 0.63 and CR of 0.94. It emphasises the importance of the supervisor being an enabler and is supported by the work of Stroet et al. (2013), Devos et al. (2015), Ahmed et al. (2017); Davis (2019) and Khuram et al. (2023). Tahir et al. (2012) noted that students found supervisor attributes like friendliness, knowledge, and encouraging independence critical to effective supervision, which, in turn, establishes good relationships and provides support and motivation. Furthermore, Davis (2019) found the cognitive and affective person-related qualities of a supervisor to be more significant than the actual discipline and research process qualities. Supervisors must establish an enabling

supervision environment for their students which fosters active and collaborative engagement with students' studies and personal well-being, demonstrating empathy. This needs to be tailored to students' circumstances to ensure that they remain committed and motivated to successfully complete their research project (Deci and Ryan, 1985; 2000). Therefore, PHEIs must ensure that supervisors are enablers and provide students with a positive, memorable experience while completing their research project.

Factor 2: Constructive Feedback

Factor 2 was labelled *Constructive Feedback* and ranked as the second most important factor influencing students' experience when completing their research project, with a mean value of 3.91, a Cronbach Alpha of 0.94, an AVE of 0.71, and CR of 0.94. This factor emphasises the supervisor's ability to constructively guide and develop the student's ability to demonstrate academic research rigour. Kourgiantakis et al. (2018) and O'Brien et al. (2022) further note that feedback should be specific, based on observations of what was written, timely, corrective, and goal-directed to scaffold student learning; promote self-regulation; and enhance knowledge and skills, professional judgement, and self-reflection. Maslova et al. (2022) and Lyness et al. (2013) assert that feedback should be constructive, meaningful, positively framed, and focus on student achievements. The source, type, and delivery of feedback have a significant impact on students' experience and influence their ability to accurately implement the feedback (Kourgiantakis et al., 2018). According to Mazlina et al. (2014), effective feedback is crucial to foster productive working relationships between supervisees and supervisors, which promotes an atmosphere of open communication and trust. However, desirable academic outcomes are dependent on the student's openness and readiness to accept criticism and constructive feedback, as well as the supervisor's ability to provide it (Mazlina et al., 2014).

Factor 3: Research Process

Factor 3, *Research Process*, was the fourth most important factor that influences the student experience during completion of the research project. With a mean value of 3.67, a Cronbach Alpha of 0.94, an AVE of

0.72, and CR of 0.94, this factor showcases the importance of Factors 1, 2 and 4 to successful completion of a research project under supervision. It confirms the importance of the supervisor's understanding and ability to guide and develop students effectively to successfully complete their research projects. As noted by Deci and Ryan's (1985) SDT framework, it is important that the supervisor, in collaboration with the student, set meaningful and self-concordant goals. Students can benefit from aligning their research goals with their intrinsic motivations and interests, enhancing their sense of competence and engagement (Sheldon et al., 1998). Setting meaningful and self-concordant goals whilst understanding the demands of the research process, makes it easier for both the supervisor and student to manage expectations. Vallerand et al. (1992) assert that setting and sharing research goals will cultivate strong relationships with supervisors, promoting a supportive research environment where the student experiences a sense of belonging as he/she progresses in his/her research journey.

Factor 4: Support and Guidance

Factor 4, *Support and Guidance* was the third most important factor, obtaining a mean of 3.69, a Cronbach Alpha of 0.90, an AVE of 0.65, and CR of 0.90. Like Factors 1 and 2, it emphasises the importance of the supervisor dedicating adequate time to students and supporting them with the research project. This includes aspects like ethical clearance documentation support, additional reading, technical support, and guidance through the research process. Khuram et al. (2023) found that supportive supervision increased student research productivity, academic engagement, and psychological resources. It creates a conducive learning environment, enabling students to gain academic autonomy, thereby increasing research productivity (Gu et al., 2015), which is advocated for by Deci and Ryan's (1985) SDT framework. Thus, PHEIs need to ensure that supervisors are equipped with the relevant soft skills that enable them to provide students with adequate support and guidance through their research project. In addition, supervisors need to help students cultivate a sense of competence by supporting their skills development and providing positively framed, meaningful feedback (Gunasekare, 2016).

The exploratory factor analysis conducted using the Pearson's Correlation Matrix (Table 2) shows a positive significant relationship between all four factors. These correlations are considered significant, as they are all greater than 0.5 (Cohen, 1988; 1969; Gerber, 2013). There are no negative correlations, which supports the view that, should a factor increase, there would be no negative impact on any other factor (Pallant, 2007). There is a significant positive relationship between *Enabling Supervisor* and *Constructive Feedback*, *Support and Guidance* and the *Research Process*. The relationship between *Enabling Supervisor* and *Constructive Feedback* [r=.918, $p < 0.01$] confirms that an *Enabling Supervisor* has a positive relationship with students receiving *Constructive Feedback* from the supervisor. In addition, the Correlation Matrix indicates that a positive reaction exists between an *Enabling Supervisor* and *Support and Guidance* [r=.888 $p < 0.01$]. The correlation with *Enabling Supervisor* and *Research Process* [r=.865 $p < 0.01$] confirms the importance of a supervisor being engaged and ensuring that constructive feedback and teaching take place throughout the research process. The remaining correlations support a positive relationship between the factors *Constructive Feedback* and *Research Process* [r=.836 $p < 0.01$], *Constructive Feedback* and *Support and Guidance* [r=.878], and *Research Process* and *Support and Guidance* [r=.910 $p < 0.01$]. The research process is iterative in nature, and the correlation confirms the importance of an enabling supervisor positively influencing the student's ability to understand and actively participate in the research process, knowing that adequate support and guidance will be provided and supported with constructive feedback on his/her academic work. Notably, Factors 1, 2 and 4 have a significant influence on the manner in which Factor 3, the research process, is experienced and perceived by students.

Table 2: Correlation Matrix

	Factor 1: Enabling Supervisor	Factor 2: Constructive Feedback	Factor 3: Research Process	Factor 4: Support and Guidance
Factor 1: Enabling Supervisor	1	0.918***	0.865***	0.888***
Factor 2: Constructive Feedback		1	0.836***	0.878***
Factor 3: Research Process			1	0.910***
Factor 4: Support and Guidance				1

Cohen (1988:79-81; 1969:77) indicates that there are three levels of interpreting the values in the correlation matrix with all values between 0 and 1 classified as r = 0.10 – 0.29 = small*; 0.30 - 0.49 = medium**; and 0.50 – 1.0 = large***

A regression analysis was performed with the three factors identified as *Constructive Feedback, Research Process*, and *Support and Guidanc*e against the factor *Enabling Supervisor*. It supported and accepted the hypothesis that supervisors have a direct positive influence on students' experience of the research process (F = 406.721, df = 3, Sig < 0.001, R2= 0.879). The same three factors were significant predictors of an *Enabling Supervisor* obtaining the following loadings: *Constructive Feedback* (β = 0.499, SE = 0.05,t = 9.974, Sig < 0.001), *Research Process* (β = 0.171, SE = 0.054,t = 3.184, Sig = 0.002) and *Support and Guidance* (β = 0.163, SE = 0.063,t = 2.601, Sig = 0.01). It is evident from the Standardised Beta Coefficients that *Constructive Feedback* was proven to be the most significant predictor of *Enabling Supervisor* (β = 0.569), followed by *Research Process* (β = 0.21), and *Support and Guidance* (β = 0.197).

Thus, the supervisor plays a critical role in guiding the student through the research process by providing constructive feedback on academic work and adequate support and guidance at academic and personal levels, to ensure that students understand the research process. These findings align with the pillars of the SDT framework and other scholarly studies reviewed.

Practical and Theoretical Contributions

The aim of this study was to determine the critical factors impacting students' ability to successfully complete their research projects.

Given the high reliability of the Cronbach Alphas, the findings can be generalised with caution across the population of students in the PHEI who have successfully completed their research projects.

Several recommendations arise from the findings, with those related to supervisor capacity being the most critical. Supervisor capacity development is critical for all HEIs that seek to increase postgraduate students' completion rates by ensuring that they finish in the minimum time. Capacity development programmes need to be an on-going process in which supervisors engage with the key elements of the research process.

The specific PHEI that was the focus of this study should purposefully develop and align its capacity development programme with the various stages of the research process, allowing for skills development and establishing a culture of continuous reflection to improve supervision. Secondly, soft skills should be developed to assist supervisors in providing students with constructive feedback, engage students in a motivational manner, assist them with interpreting feedback to effect changes, and provide adequate support to students as and when required. Novice supervisors should be allocated mentors who are experienced in the supervision process and who can teach them best practices. The PHEI should consider establishing supervisory professional capacity development programmes that will instil a culture of continuous learning whilst sharing expertise and experiences with younger supervisors. All these recommendations aim to develop and promote students to actively participate throughout the research process and are in line with Deci and Ryan's (1985) SDT framework.

The PHEI in question employs a large number of part-time academics who supervise students through the research process. It is important to note that part-time academics have various commitments inside and outside of the PHEI; therefore, the time invested in student success is directly influenced by the remuneration offered. Research supervision is extremely time-intensive and requires sufficient time to be effective in enabling students to successfully complete their research projects. The PHEI should explore options to capacitate its full-time supervision team, preventing over-reliance on part-time supervisors who might not

give students the time and support needed to successfully complete their research projects.

Conclusion

This study aimed to assess the critical factors impacting students' ability to successfully complete their research projects. With the National Development Plan 2030 aiming to graduate 100 doctoral candidates per million population per year (NDP2030, 2012), PHEIs need to capacitate supervisors to become enablers of students' research success. This will ensure that further studies contribute to the nation's success.

This study was limited to a single PHEI in South Africa and was conducted after the students had completed their research projects. It is therefore recommended that a similar study be conducted among HEIs nationally and abroad to establish if similar perceptions prevail. To promote a higher response rate, it is recommended that the study be administered before students submit their final research projects.

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Students' Experience of Social Presence in an Online Structured Master's Programme

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Abstract

Social presence has six facets (presence, respect, connect, belong, identify and intimacy) that develop on a continuum. It positively impacts students' achievements in and satisfaction with virtual programmes. The COVID-19 pandemic necessitated a move from face-to-face and hybrid learning to virtual learning in many graduate programmes. This qualitative descriptive study explored the experience of social presence in a virtual structured master's programme. Data were collected via anonymised email feedback, and semi-structured interviews were conducted with ten purposively sampled participants. The data were analysed by means of thematic analysis and triangulation, member checking and inputs from a reference group supported trustworthiness. The six emerging themes showed that virtual presence and respect were experienced by all participants, while connecting, belonging and social identity were experienced in varying degrees. Intimacy was not achieved. Some participants developed connections that provided encouragement and stimulated a sense of knowing colleagues despite never having met in person. Others were reluctant to make themselves virtually visible. The example set by facilitators and the virtual contact week were important catalysts in the development of social presence. Synchronous tutorials, virtual office hours, small group work, and a

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social calendar could enhance social presence and strengthen virtual graduate programmes in the higher education environment.

Key words: social presence, online learning, graduate, virtual, distance learning

Résumé

La présence sociale comporte six facettes (présence, respect, connexion, appartenance, identification et intimité) qui se développent sur un continuum. Elle a un impact positif sur les résultats des étudiants et sur leur satisfaction à l'égard des programmes virtuels. La pandémie de COVID-19 a nécessité le passage de l'apprentissage en face à face et hybride à l'apprentissage virtuel dans de nombreux programmes d'études supérieures. Cette étude qualitative descriptive exploer l'expérience de la présence sociale dans un programme de master virtuel structuré. Les données ont été collectées par le biais de courriels anonymes et des entretiens semi-structurés ont été menés avec dix participants sélectionnés à dessein. Les données ont été analysées au moyen d'une analyse thématique et d'une triangulation, la vérification des membres et les contributions d'un groupe de référence ont permis d'assurer la fiabilité des données. Les six thèmes émergents ont montré que tous les participants ont fait l'expérience de la présence virtuelle et du respect, tandis que la connexion, l'appartenance et l'identité sociale ont été vécues à des degrés divers. L'intimité n'a pas été atteinte. Certains participants ont noué des liens qui les ont encouragés et leur ont donné le sentiment de connaître leurs collègues, bien qu'ils ne se soient jamais rencontrés en personne. D'autres étaient réticents à se rendre virtuellement visibles. L'exemple donné par les animateurs et la semaine de contact virtuel ont été des catalyseurs importants dans le développement de la présence sociale. Les tutoriels synchrones, les heures de bureau virtuelles, le travail en petits groupes et un calendrier social pourraient améliorer la présence sociale et renforcer les programmes virtuels d'études supérieures dans l'environnement de l'enseignement supérieur.

Mots clés: présence sociale, apprentissage en ligne, diplômés, virtuel, apprentissage à distance

Introduction

Education is one of the cornerstones of a country's human resources (Andoh et al., 2020). The South African Draft National Plan for Higher Education thus emphasises the importance of education in the development of the country and its citizens. It further states that distance education (online or other formats) "has a crucial role to play in meeting the challenge to expand access, diversify the body of learners, and enhance quality, in a context of resource constraint" (RSA, 2001, p. 51).

Online graduate education programmes have become increasingly popular. The advantages of flexibility, self-paced learning, privacy, and cost and time saving are important in increasingly busy schedules (Joiner et al., 2021; Karaoulanis, 2017). Through these properties, online education increases access to graduate education and allows many who cannot enrol in conventional programmes an opportunity for further study. This promotes equity in graduate education (Andoh et al., 2020). However, online education suffers from high dropout rates. Therefore, educators need to implement strategies to support students in order to promote student retention and increased pass rates (Modise, 2020). The Community of Inquiry theory (Garrison, Anderson and Archer, 2000) holds that the online teaching and learning experience depends on three fundamental elements: social, teaching and cognitive presence. Optimal online learning occurs if they interact.

Innovative educational strategies and information technology with dedicated platforms for online learning that allow real time and asynchronous engagement, interactive feedback, and tutorial functions support the growth of online education (Joiner et al., 2021). This process was accelerated by the COVID-19 pandemic and the need to limit face-to-face contact, as well as the subsequent travel restrictions (Rodrigues, 2020).

Context

In keeping with the move to online teaching and learning. a structured master's programme in Human Rehabilitation studies (the study programme) at a South African university transitioned from a blended programme (a semester online programme supported by 40 hours

of physical contact per module) to an entirely online programme. For close to 20 years, the programme focused on hybrid learning presented through a combination of face-to-face and online teaching and learning strategies. This route was inspired by a social justice ethos to accommodate a student body from diverse African settings that combined studies with full time employment and thus benefitted from the flexibility of an online programme. However, face-to-face contact weeks always played an important role in nurturing graduate attributes that are traditionally dependent on social interaction, including:

- Developing reflective practitioners
- Facilitating interaction and collaboration in multiple stakeholder environments
- Developing students that nurture and support one another
- Co-construction of knowledge

These activities must be fostered virtually and might be neglected if not consciously planned for and pursued. Furthermore, learning is enhanced through social interaction, which is limited during online teaching. Discussion forums and social media platforms can be used to facilitate contact, but these cannot replace the intimacy and immediacy of being in the same physical location (Sung and Mayer, 2012). Thus, online programmes must purposefully incorporate strategies that nurture interaction, develop social presence, and support students for optimal learning to occur (Volschenk et al., 2020).

Social Presence

Social presence is the extent to which people perceive one another as 'real', connected and belonging to the group during virtual interaction (Lowenthal and Snelson, 2017; Sung et al., 2012). It enhances students' achievements and their satisfaction with programmes, and facilitates a sense of community (Sung et al., 2012).

Kehrwald (2010) operationalised social presence and proposed a theoretical framework that formed the theoretical basis for social presence in the current study (Figure 1).

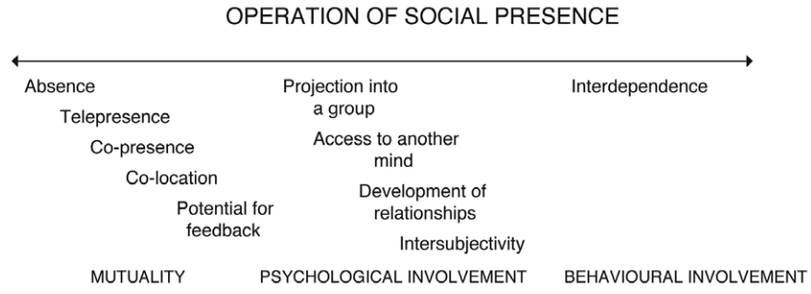

Figure 1: Continuum of social presence
Source: Kehrwald (2010)

As shown in Figure 1, social presence occurs on a continuum and there are different degrees of being present in an online space. Being socially present starts with logging in and increases incrementally through the level of active involvement and sharing during online interaction to a point where group members become dependent on one another for individual as well as group outputs and outcomes (Kehrwald, 2010); which, in the case of the programme under study, would be learning and co-construction of knowledge.

Building on Kehrwald's (2010) work, Sung and Mayer (2012), Lowenthal and Snelson (2017) and Lowenthal and Dunlap (2020) identified six facets of social presence, namely:

- Being present (Telepresence) starts with the action of logging in. However, as in a physical environment, without any engagement, one can log in but not be part of the proceedings. Online presence is enhanced by commenting, using emojis, asking questions, sharing, responding, and continuing a discussion thread. Thus, being present is dynamic and varies with the number and quality of engagements on the online platform. It also accumulates over time.
- Social respect (Mutuality): Cohesiveness and warmth must be developed in the online group. This is achieved by group members greeting one another whether verbally when the online space is shared synchronous in time, or in writing when

it is an asynchronous space. Respect is further shown in the way comments and questions are worded, the timeliness of responses and showing appreciation for others' contributions.

- Social sharing/connectedness (Projection into the group) occurs when group members believe that they share commonalities and demonstrate this by sharing information such as relevant references, personal experiences, values, and beliefs. During social sharing, group members cautiously start to show one another who they are, and humour and sharing anecdotes play an important role.
- Belonging (Access to another mind) is demonstrated by movement from individuals sharing a learning space to the formation of a cohesive group with shared goals that learns and develops knowledge together. Group members accommodate different viewpoints and show understanding and support for others' viewpoints by encouraging feedback, explorative questions, and indications of understanding.
- Social identity/being real (Development of relationships): Participants recognise one another's presence in the group by using given names and acknowledging aspects of one another's lives. Group members celebrate one another's successes, such as a high grade, while providing support during difficult times.
- Social intimacy (Behavioural involvement): Participants give of themselves to the group through affective responses such as self-disclosure, sharing personal anecdotes and emotions.

Problem

The Draft National Plan for Higher Education in South Africa states that distance education should not be uncritically introduced as the answer to the challenges faced by the sector, including, we would argue, those caused by the COVID-19 pandemic. It calls for assessment of distance education programmes to ensure that they contribute to education in South Africa and Africa (RSA, 2001). Students' learning needs must be met, they must fulfil the requirements of the programme, and they must be satisfied with it. Social presence plays a pivotal role in achieving these

requirements during online teaching and learning (Kim et al., 2016; Sung et al., 2012). While it has been fairly extensively studied, more research is required on students' experience of social presence and the strategies that can develop it (Lowenthal and Dunlap, 2020). Thus, our study posed the following questions: What were students' experiences of social presence while participating in the study programme and what strategies can be adopted to enhance social presence?

Methodology and Methods

This study adopted a post-positivist perspective and a naturalistic approach where understanding of social presence and strategies to enhance it was based on the meaning that participants ascribed to activities and interactions during the programme. We adopted an ontological position of relativism, arguing that people experience situations differently, that reality is subjective, and that there is no single reality or right answer. We believed that individual students would interpret social presence and their experiences of it in different ways based on their current and previous experiences. We further acknowledge that as researchers we played an active role in the social construction of knowledge during the research process (Bradshaw et al., 2017).

A qualitative descriptive design was employed that focussed on exploring participants' experiences and emotions over a short time span to develop practical recommendations to implement in future modules (Bradshaw et al., 2017). In 2021, module 1 of the programme consisted of an online contact week (40 hours) facilitated on the Microsoft Teams platform, followed by 15 weeks of online teaching and learning via the SUNlearn platform. Synchronous teaching strategies included PowerPoint lectures, group work, video clips, case studies, practical sessions on negotiating university platforms, and structured reflection sessions. Asynchronous learning was facilitated through self-directed learning, discussion forums, and small group work. Assessment was conducted through discussion forums and assignments. Facilitators were available via SUNlearn, email, WhatsApp, and phone.

Seventeen students enrolled in the study programme and maximum variation purposive sampling was used to select ten to participate in the

study. The participants differed with regard to gender, age, professional background, level of activity in online discussion groups, and achieved marks. Data saturation was achieved after ten interviews.

Data were collected by the primary author through virtual interviews on the Microsoft Teams platform, with the interviews guided by an interview schedule. Participants were asked to narrate their experiences of being socially connected to the group and their perceptions on the extent to which social presence was fostered during the programme. Additional data were extracted from anonymous written feedback after the contact week.

Deductive and inductive thematic analysis was employed. The broad concepts of social presence described by Sung et al. (2012), Lowenthal and Snelson (2017), Lowenthal and Dunlap (2020) and Kehrwald (2010) served as signposts for the analysis and thus the deductive component. Around each of these, themes were developed from the data in an inductive manner as described by Braun and Clark (2006).

Ethical Considerations

The study received ethical approval (N21/02/010) and institutional permission. Participants benefitted from the study as strategies to enhance social presence were identified and implemented in subsequent modules of the study programme.

Trustworthiness

The power imbalance between the principal investigator, a facilitator in the module, and the participants threatened the credibility of the data, especially in terms of sharing unfavourable opinions. However, the data contain examples of positive and negative experiences. The range of experiences, together with purposive sampling, data saturation, triangulation of findings from the interviews and contact week feedback, member checking, and the support of a reference group during data analysis enhanced the trustworthiness of the findings (Nowell et al., 2017). During member checking all responded that a draft analysis of the findings reflected the diversity of experiences in the class.

Findings

The participants' demographic details are presented in Table 1.

Table 1: Participants' Demographic Details (developed by authors)

	Gender	Age	Home language	Profession*	> 70% in module	Online activity level: above / below group mean
P1	F	45	Seswati	SLT	No	Above
P2	M	30	English	PT	Yes	Above
P3	F	40	English	SLT	Yes	Below
P4	F	38	Afrikaans	OT	Yes	Above
P5	M	39	Afrikaans	SLT	Yes	Above
P6	F	32	English	OT	Yes	Below
P7	F	27	English	SLT	No	Below
P8	F	43	Tsepedi	PT	No	Below
P9	F	29	Afrikaans	MOP	No	Below
P10	F	27	English	MOP	No	Above

* SLT- Speech and language therapist; PT - Physiotherapist; OT- Occupational therapist; MOP – Medical orthotist/prosthetist

Six themes were derived from the data:

- Theme 1: Being there beyond the requirements of the programme
- Theme 2: Respect "a hundred percent received and given"
- Theme 3: Connecting; being there together
- Theme 4: Belonging to a space where knowledge is co-constructed; "I might not understand you, but I hear you"
- Theme 5: Social identity; being real
- Theme 6: "Online, for me it works"

Theme 1: Being there beyond the requirements of the programme

To a certain extent, virtual presence was mandated in the study programme by the module requirements with comments and responses in the discussions being graded. Students had to make a minimum of seven posts per discussion. However, the findings showed that they went beyond these requirements. The ten participants made a total of 1 662 posts, with a mean of 151 (118-215). The allocation of marks for

participation in discussions might have forced postings, with posts being made to earn good grades rather than to develop the topic under discussion.

> P3: I do think that sometimes the comments were given because it was a requirement. Students would sometimes say something that did not even relate to something I said because there was an understanding that the person would be marked on that.

WhatsApp groups were seemingly used for programme-related conversations rather than social sharing.

> P9: That [WhatsApp group] is also very quiet and people just ask about assignments and due dates and words and those type of things. But it is not really social interactions.

The example set by the facilitators during and after the contact week in terms of being there and being available assisted participants to ease into the module and work on a virtual platform.

> The lecturers established an 'esprit de corps' in the students from the outset of the contact week and re-enforced it in the next two days, despite not having the luxury of direct contact. (Anonymous contact week feedback)

> P10: ...the lecturers assured us that they are going to be there the whole time...the fact that they are there at any time for us, that I really did appreciate...we knew there were people that we could turn to. That [facilitators] were really available to answer any of our questions.

The first requirement for social presence, being there, was thus established.

Theme 2: Respect "a hundred percent received and given" (P7)

Respect is one of the basic building blocks of healthy relationships and after being present forms the foundation on which further degrees of social presence can be built. Participants agreed unanimously that interactions were respectful. They used words like friendly, considerate, and polite to describe online communication.

> P8: The respect is there. How people raise questions. How we respond to each other. It shows there is a huge lot of respect.

Virtual conversations among groups of people who do not know one another well but hold one another in high regard and seek to treat one another respectfully can become stilted. Such platforms cannot replace the informality and spontaneous nature of the spoken word. The sender must consider that words without tone of voice, body language and facial expressions can be interpreted in ways that were not intended.

> P3: ...when it is in person you can provide other kinds of cues. You can convey your feelings or convey a message of not being judgemental or whatever via facial expression.

> P9: ...if you can't see someone or speak face-to-face to somebody and you feel different from someone else...You really need to think and make sure that you don't overstep the line of someone feeling like they are attacked. It happened to me once where I replied [to] ... a comment in a discussion and then someone felt like they have been attacked because I thought different from what they thought.

Participants raised the possibility that, in order to ensure respect and not hurt feelings, some things were left unsaid, some opportunities were unexplored, and discussions were stilted, especially in the initial stages. They felt that being overly respectful might have stifled learning in some instances.

> P3: I am thinking maybe even to the point that the politeness became a barrier. So, a question was asked, for example, during the contact week and people wanted to answer. Everyone is waiting for someone else to go first. Ja, it led to these long pauses...for me there were things sometimes that I wouldn't know how to address in a way that it would not be offensive. So, then I would not address it at all in the discussion group and comment on something else rather.

Therefore, respect did not always crystallise into connectedness and belonging.

Theme 3: Connecting, being there together

Social connection in the virtual space depends on individuals' ability to project themselves as real on the virtual platform. It also depends on the ability to construct others as present. The narratives of two participants show how a connection was achieved by one, and how it was desired but not achieved by the other. Through actively making herself visible and looking for others, P4 managed to build a small community among the larger student group that sees one another as real, is connected and has developed some level of intimacy. In contrast, P8 was too reserved to make herself visible, and while she craved connectedness with fellow students, did not experience any.

P4 commented:

> For me it was very real…almost like I was speaking to someone next to me…After we finished the contact group I asked some of the people individually. And we formed this small little group…we have our monthly team meeting if we can get together. We try to call each other weekly at least to touch base…if you are available at the time. If you struggle with a question, pop a WhatsApp. If you are looking for a certain article that you can't find, then just ask a question. It's not very structured. It is very informal. We are just there for each other if we need each other…And then I just made individual contact with some of the other people as well. I keep contact with some of the people in the [bigger student] group that I have made a personal connection with by just chatting. I don`t know these people from Adam. But it feels like I know them, I don't know how to explain that concept. I send a message to some of them. How's your kids or I know of some of them whose family members are sick or there was a birthday of this one's mother, and that makes it even more real … These people that I interact with…it is not just a figment of my imagination or some words on a screen. So that's what's adding to this social experience or my connections with them is that we are actually connecting behind the class. Behind the master's programme. I am probably gonna jump on them [when meeting face to face] …like I have known this person for ever.

In sharp contrast, P8 recounted:

> Sometimes it is a little bit difficult, especially when we are doing our discussions on SUNlearn…It is like you are talking to a name. You don't have a face in your mind to put it to the name. You are busy communicating with a person, but you don't even remember how they look like on the class photo. Sometimes you don't need help in the sense of, 'Tell me where can I find information?'
>
> Just, just to hear that we are all struggling with time. There is just too much work, there is family, there is your real job, there is schoolwork. Just to hear someone concurring with you. Saying, 'You know what, we will push. Let's push.' Encouraging each other. In a virtual set up this is not there and sometimes that's what we need especially. For me it is a little bit difficult. I want to have that kind of contact or that kind of relationship. I have to go to the group info and then look at the names like Ahh, Ok, Maybe I can ask this one, take the number and then maybe WhatsApp them on the side and say, 'Hi it's [name], I am in class with you. I was just wondering can I ask' and you're thinking, 'Whoa; what will this person say?
>
> Like (laugh) You don't know me we are just classmates.' Something like that. So, it's, um it's extremely difficult for me. Because I am a little bit reserved and I always struggle to make relationships with people. So, when I have not even seen them it is really difficult. Sigh. I really don't think, I don't think there is any closeness growing [in] … the group. And I feel very isolated. I feel like I am alone. But I still don't have that courage to ask.

For some, insufficient connection with fellow students extended to their connection with facilitators.

> P1: ...This platform was not really...addressing all my needs as much as I would have wanted it... SUNlearn, right now, feels still quite far from how I would want to experience the interaction with my facilitator. There are limitations...I am a person who observes a lot and the lack of that and of being able to have my teacher present...I needed a presence of my facilitator so that I could ask questions. I also knew that we could ask, but up to a certain degree. And we could not really isolate a lecturer on the side and say, 'This is my thinking about this assignment initially ... I pulled out this information. Is this relevant enough? Is this relevant to this topic?' And so that really, I felt to some degree a bit disappointed from that angle.

Some participants were comfortable with solitude and working on their own. Others yearned for more interaction.

> P9: I am very private. So, it is not something that really bothers me. I normally [do] not share a lot of what I am doing, so it does not bother me.

> P2: So, social presence wise I would just conclude and say I do feel pretty much alone. I did not feel like there was a lot of social support. Which was not a problem for me. I felt alone. But I love being alone. But that does not help anyone else.

Online contact sessions, tutorials at specific times during the module, and debriefing sessions were suggested as ways to enhance contact and connections.

> P2: You know even if it is just once a month on a Friday afternoon we all come together as a Zoom class and just bring in any challenges or any discussions that we need to ask. Or we can even throw in an article or two...once or twice a month.

> P1: There was that opportunity [provided by one facilitator] to actually before you move on to another section of the module to speak about anything you want to talk about...That was quite nice...there is an opportunity to ask questions...I felt that opportunity gave me the confidence that, OK, I have someone to go to if I have questions.

Small social touches might help to build interpersonal connections.

> P2: Little things like birthdays...Whenever it is someone's birthday...it comes up and everyone has an opportunity to just remember that we are all people with lives. Little things I think go a long way.

Theme 4: Belonging to a space where knowledge is co-constructed; "I might not understand you, but I hear you" (P4)

In graduate programmes, knowledge should be developed as much as taught. Students and facilitators have relevant experiences and knowledge that should be shared, explored, validated, and absorbed into the larger body of knowledge for all to tap into.

> P2: While we are doing an individual master's, there needs to be a collective framework so that we can all collaborate for further growth.

For knowledge to be co-constructed, people must feel safe enough to share, encourage and explore. Group members should not fear being ridiculed, ignored, or attacked.

> P4: We all want to be heard. We all want to be validated...we want each other to be comfortable...So it's to create safe space where everybody is respected.

The experience of belonging to the group and the confidence to share in it varied among participants. Some felt that the space allowed and even encouraged the sharing of different viewpoints. They described support for one another's views, and a non-judgemental environment.

> P1: ...never in that platform [SUNlearn] do I ever feel judgement. It really is transparent and there are opportunities for trust in it. So, I think we trust each other enough to actually share, support and encourage each other.

P8: I think there was a kind of working together approach [in discussion groups]. Because I'll post something and then my fellow student will ask like, 'What exactly do you mean? Do you mind elaborating further or give an example?' When we were asking each other questions, for me it was like you know what, maybe you need to look further into it…for example after reading someone else's post I`ll go and I`ll get that article and then read further. Maybe an article that I wouldn't [have] thought of taking it out or searching for it. So it was, … we learn [more] and help … each other. Learning from my peers. Also the manner, the way of writing, ja. You will see someone. How they present their topic. How they go about it and how they support their arguments with literature…this is another angle that I could have looked at this topic. So, that for me was a growing point, because I will see, oh, actually you should be presenting your topic like this. Even when follow up questions come, I know how I can answer this. I know just from looking at the way that other students are doing it.

However, the opposite was also experienced. Some participants felt a competitive edge to the comments and questions and felt that some of their fellow students were using the platform to criticise, show superior knowledge, and enforce their opinion instead of collaborating to enhance learning.

P7: In my own discussions I have never felt criticised…But in some of the other posts I feel like there was a note of criticism.

P2: Everyone wants to shine in some way. Or perform… it becomes sort of this, this gladiator contest. They are just trying to prove a point on some level (sigh)…. Rather than collaborating …I think it was particular with a couple of students that I felt that there was this little like threatening (laugh) sort of intimidating thing……the way in which the discussions were worded, and it just felt very finger pointy in a sense. I'd rather disprove someone than collaborate with each other and said 'yes, I believe that you are correct and let us add to that…'

Facilitators have an important role to play in this regard. They should set the tone and their communication should show that there is room for different viewpoints. They should also offer encouraging feedback, ask explorative questions, and if need be gently nudge the student in a different direction. It seems that facilitators managed to achieve this in the current programme.

P4: I have honestly never experienced a relationship with my facilitators in this type of way. Even though we are miles apart and we are online. But I feel very comfortable with sharing my thoughts with you. I feel very comfortable with popping you a message or an email…You guys have just been really amazing and compassionate and understanding of our learning process. I felt you guys [facilitators] were very supportive…I felt you always tried to ask it in a very sensitive, compassionate way while also trying to stimulate my thinking in a sense. I have never felt judged by any of the facilitators. I have never felt like when I sent an email that, oh shoot, why did I say that or why, why did I ask that? I never felt that I was asking dumb questions.

However, not all felt free to access facilitators. They acknowledged that the invitation was made but were hesitant and required an additional nudge which was not forthcoming.

P6: It [whether she would contact lecturers and ask] depends on the question. It depends on the content of the work. I was not sure if I could ask. I was more hesitant to ask. Like if it was a quick question regarding the assignment or just a one sentence question then I would ask via WhatsApp. However, when it was a more complex issue…I am just thinking that sometimes to ask is cool, but not too much and that we must go and figure out ourselves. Ja, do research.

These participants were reluctant to take the first step by asking for an explanation. Some would have liked a more structured opportunity for contact instead of having to initiate the process via a social media request.

P1: There was one assignment where I felt I needed to have a vigorous conversation…on how I interpreted that assignment versus how the comments were made for that assignment. This is where I am finding the barrier in participation for myself is that I do not know what platforms to use to actually engage my facilitator. An email is, is really for me it is not the best. Because emails can be sent back and forth. An interaction like this, the interview, is maybe a better option in this time and age. I really miss opportunities like this for myself and this may not change my mark, but what it does for me, it allows me opportunities to get deeper in how I put my thought processes into assignments…the human interaction is not there for me…the necessary questions and for myself to understand myself better and self-reflect and where I did go wrong, where I thought I was right…I was not sure to what degree I could ask for the opportunity [for face time]. The email was almost like I could and, yes, it is mentioned call me or something like that, let me know if you have questions. You made the invitation. I was too scared to formalise that. Did it mean was I questioning you in your analysis…I assumed that we only had these opportunities like your like around weekly uh week sessions um and then anything else is you can email me, you can send me a WhatsApp. That kind of thing, ja…Had I felt initially that the, you know, opportunities to really engage with our facilitators could be, literally be in any form, I think maybe I would have been better at not being too nervous to ask, ja.

Another participant pointed out that they were graduate students and should take some responsibility in contacting facilitators.

P5: It is good to know that that invitation [to contact facilitators] is out there…if something is not clear to me then I am going to ask. I don't know how else you can make the invitation more inviting. I mean we are students, and it is post grad students. So, by now you either ask or you gonna have to just suck it up, you know. If you don't ask you are not going to get a response.

Theme 5: Social identity; Being real

Subtheme: "It's actual people"

The experience of social identity covered a wide spectrum. Some participants found fellow students real and could ascribe styles and personalities to them through reading their posts. They even developed feelings of friendship.

P6: So, initially I just saw the name. I was not sure to who I am talking. And then after a while, the first discussion, I started to get to know different people and…I got to see how they comment.

P3: I never thought I would get to know people virtually like I have or feel a connection to people that I have only met virtually.

P10: I could actually put a face to the discussions and even the accents or the way someone spoke. I could still like you know 'hear' that in the writing in the discussions. So, if I could remember the way she spoke, it is almost like she is speaking to me in her own voice in the discussions.

The online contact week played an important role in establishing some social identify between group members.

P7: I think personally for me [online] contact week made the start of things less intimidating. It took a little bit of the pressure off. We got to know people more because you could literally just sit and listen. And I think that helped build relationships with the rest of the people in the class as well. I got to know people's personalities and things that they are passionate about…One should definitely not do it without a contact week. I think without the contact week I would have been lost.

P10: We had that interaction session where we speak about something about ourselves. That sort of gave us the idea that, oh, it is not just online…It is actual people and you learned

> about them. And then as we went on in that week, we were given activities to sort of interact with them. And I feel that sort of made it a lot nicer. Because it felt like we, even though we were not in a classroom, we were still in a classroom, and we could connect to each other. We could talk. We could joke. And learn more from each other. Besides just learning about each other.

Working in small breakaway groups on the online platform was seen as an important strategy that helped students to get to know one another.

> Some more interactive sessions would have been nice, compared to the conventional 'sit and listen' slide show. (Anonymous contact week feedback)

Subtheme: "It really just felt like a name on a screen"

As alluded to by P8 under theme 3, others could not put a face to a name.

> P2: It really just felt like a name on a screen. You could not remember sort of anyone's personality, their jobs, their...It was quite challenging.

While virtual icebreakers have some value, they fail to involve all the senses and whole class experiences. It is limited to one person explaining him/herself. One can only hear it. Even then, the one sense one would expect to be fully engaged was not always easy:

> Network problems my side, could not be fully included and issuing headsets (to improve audio quality and nullify the effect of bad acoustic environments) for the presenters would be a worthy investment. (Anonymous contact week feedback)

> P6: ...when the line was very bad...for me it [online contact sessions] was very difficult to follow. And with different accents, it was very difficult for me to understand.

One cannot see body postures, but only a face (that may be distorted depending on connectivity). However, one cannot make eye contact. If one responds with a smile or nod, the person sharing is not aware

of this. The additional action of sending an emoticon through the chat function is required. More reticent colleagues will not do that and even when done it is not processed in the same subconscious manner as body language. Others' reactions to the information is not the same as in a classroom.

> P1: The liveliness you offer in person got uhm (thoughtful as she speaks) decreased, decreased.

Theme 6: "Online for me it works"

Despite the challenges regarding social presence, the participants agreed that the structure of the programme suited their needs and lifestyles better than a face-to-face programme would have and that it did not detract from their learning.

> P4: I don't feel like it has affected my learning in anyway or to the detriment...I don't feel like I have missed out on anything.

> P1: ...this journey, experience wise, it is amazing how it actually has started to impact my work in a positive way. In how I view disability and how I view my patients' experiences and how I view myself as an academic learner. Separate to being a clinician...I cannot explain the positiveness of this journey.

One participant with a hearing impairment was especially positive about this way of learning.

> P6: Online discussions are for me easier than person to person... easier for me to read and think about it [content] and come back and reply. And it was also easier than if it was discussions in a class. In a class it is talking, and I am still trying to figure out what the person says. I first have to understand what they are saying before I comment. In a discussion like that I get lost. So, for me it easier to do it online...It also gives me an opportunity to contribute. Whereas if it was in person, I think it will be difficult for me to contribute, because of my hearing. So, I would say there is enhanced learning with the discussion. I am

> just thinking about contact week. When we … [were] breaking up into groups, [that] …. was different than if it was in person. Because sometimes in person it is not good for me to divide in groups. It is so noisy…I can't hear what my group says. Because there are other groups happening. Online, I was able to hear clearly and there is no noise. Background noise. I find online for me it works. It works for me.

The advantages of an online programme identified by the participants included its wider geographical reach and being able to work at one's own pace in one's own time. It was also noted that, while communication was different, it was dynamic.

> P5: The communication was often a lot more dynamic than you'd maybe have when you did not do it computer based. Like we'd be able to give comments and ask questions while someone was busy giving a lecture. I mean you could have a conversation in real time while someone is actually busy with a point, without interrupting them. So, I think the communication was often a lot faster and a lot more dynamic. I feel the communication was very, was good…it did not feel like you were missing out. It actually felt enhanced.

Furthermore, the platform could prevent prejudices from coming to the fore.

> P5: In a way it also felt like certain prejudices sort of got left at the door…sometimes inevitably, what a person looks like, or the way they talk affects the way that you sometimes perceive their inputs…you have a clean slate. So, you got to know them on an academic level, you were just focussing on their perceptions and their interpretations. I felt like I was a lot more neutral. There was a lot less prejudices and preconceived perceptions of whoever is typing that.

Discussion

An individual is not simply present or absent but is present in degrees with increasing involvement. Like being present in person, online social presence covers a spectrum from being there, but sitting quietly in a corner, to being behaviourally and emotionally engaged. People must be there together to achieve two-way communication, salient interpersonal relationships, and emotional closeness. Individuals must make themselves known to the group and acknowledge others (Kehrwald, 2010). This study explored students' experience of social presence while participating in the study programme with a view to identifying strategies that can enhance social presence. All the current participants were present, as shown by the number of discussion posts, among other things. However, only some projected themselves into the group, developed co-presence and sought more social presence than what they had. Weidlich et al. (2022) also found that people usually required higher levels of social presence than what they experienced during online learning. However, it seems that the structure of the programme assisted the current participants to experience higher levels of social presence than those in the self-paced academic writing programme described by Vrieling-Teunter et al. (2022).

Due to different personalities and social and physical needs as well as diverse learning styles, the level of social presence that a person requires and feels comfortable with differs (Lowenthal and Dunlap, 2020; Weidlich et al., 2022). As the results show, some prefer working individually and might find that activities that facilitate social presence irritate them and detract from their learning experience (Weidlich et al., 2022). Others felt lonely, missed support from peers and were anxious about engaging with the group to the point where they found it difficult to ask for or share information.

The nature of online communication is also important in fostering social presence (Lowenthal and Dunlap, 2020). Our findings showed that communication was respectful. Mutual respect is an important component of social presence (Sung and Mayer, 2012). Interaction can be surmised to some extent as the findings showed evidence of acknowledgement, collaboration, and disagreement. However, learning opportunities were lost as a result of refraining from asking for clarity or disagreeing on contentious points. Insufficient connection and bonding among the student group might have meant that they were not always

sure how to negotiate the space between respect and confronting difficult issues (Grech, 2021).

Kehrwald (2010) found that social presence increased as the study participants developed an understanding of one another's ways of doing, thinking, temperaments, emotions, and intentions during virtual interaction. However, the current study found little evidence of affective communication (Lowenthal and Dunlap, 2020). Furthermore, some participants' learning might have suffered due to a lack of social presence as Grech (2021) showed that an emotional connection with fellow students assisted active participation and collaborative learning.

Wang et al. (2019) established that facilitator presence facilitates social presence among students. Sung and Mayer (2012) also noted that facilitators need to model respect, sharing personal information, addressing people by name, and maintaining an open mind. The current study's findings showed that lecturers modelled being present online and were available to students. At the same time, Wang et al. (2019) warned that too much facilitator involvement during asynchronous online discussion decreases learning. It can be argued that the high level of student engagement during online discussions in the current study meant that lecturers did not stifle interaction among students.

In addition, some study participants expressed a need for more contact with lecturers. Thus, it is important that facilitator presence is also established outside of the asynchronous student discussion forums. Participants suggested synchronous virtual tutorials, recognising events like birthdays, structured one-on-one access to facilitators at specific times during the module, and debriefing sessions. These proposals are supported by previous research (Karaoulanis, 2017; Joiner et al., 2021; Modise, 2020). Sung and Mayer (2012) indicated that providing individual feedback and a virtual open-door policy and/or virtual office hours can also be helpful (Joiner et al., 2021; Modise, 2020).

Furthermore, small group work significantly enhances the experience of social presence (Akcaoglu and Lee, 2016). As shown by our findings and supported by the literature (Joiner et al., 2021), small groups bring diversity and different perspectives to the learning experience. However,

different realities were experienced, with some students feeling criticised and that the discussions became a competition where individuals wanted to shine and showcase their knowledge rather than work with others to construct knowledge and ensure communal growth. Kehrwald (2010) also described this phenomenon and labelled it 'negative social presence' as these actions lead to disengagement of other group members.

Conclusion and Recommendations

It can be concluded that the participants' realities regarding social presence ranged from responding to the requirements of tasks and assignments, but experiencing isolation and loneliness, to interdependence and being involved in one another's lives. They had varying and opposing experiences of mutuality and belonging. Emotionally, participants expressed different degrees of satisfaction with the social presence they experienced based on their personal learning styles, support, and physical needs. They suggested strategies that might enhance social presence for future student cohorts that align with previous research on the topic. Structured opportunities to facilitate social presence should be embedded in online programmes. More specifically:

- Direct access to tutors via email, 'virtual office hours' or another communication portal is essential. Invitations to and the structure of these communication channels should leave students in no doubt about the rules of engagement and the sincerity of the invitation.
- Synchronous sessions such as tutorials could enhance the experience of social presence, but should be carefully balanced with flexibility.
- Frequent small group activities should be organised.
- Sharing volunteered information and photos on the learning platform and/or a social calendar with information on birthdays and other special occasions should be encouraged.

Future studies could include larger samples and quantify the level of desired and experienced social presence.

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A Comprehensive Analysis of Online Examination Frameworks and their Applicability to Open and Distance Learning in Namibia: A Scoping Review

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Abstract

Demand for effective assessment methods in Open and Distance Learning (ODL) is rising due to its adaptable, inclusive approach to diverse student populations. Online examination frameworks have become essential tools for ODL. This study involved a scoping review of current online examination frameworks for ODL to establish how they are implemented in higher education institutions and identify the challenges of applying them in Namibia. Data from six electronic databases for the period 2017-2022 was collected using a scoping review methodology. Of the 97 articles identified, only ten satisfied the inclusion criteria. Six relevant online examination frameworks for ODL were identified and recommendations are made to adapt these for Namibian higher education institutions offering ODL.

Key words: online examination, framework, visually impaired, subjective examination, free handwriting, fault-tolerant, unsupervised, natural language processing, Namibia

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Résumé

La demande de méthodes d'évaluation efficaces dans le domaine de l'enseignement ouvert et à distance (EOD) augmente en raison de son approche adaptable et inclusive des diverses populations d'étudiants. Les cadres d'examen en ligne sont devenus des outils essentiels pour l'EOD. Cette étude a consisté en un examen de la portée des cadres d'examen en ligne actuels pour l'EOD afin d'établir comment ils sont mis en œuvre dans les établissements d'enseignement supérieur et d'identifier les défis liés à leur application en Namibie. Six bases de données électroniques pour la période 2017-2022 ont été exploitées à l'aide d'une méthodologie d'examen de la portée. Sur les 97 articles identifiés, seuls dix répondaient aux critères d'inclusion. Six cadres d'examen en ligne pertinents pour la FOAD ont été identifiés et des recommandations sont formulées pour les adapter aux établissements d'enseignement supérieur namibiens proposant une FOAD.

Mots clés : examen en ligne, cadre, malvoyants, examen subjectif, écriture libre, tolérant aux fautes, non supervisé, traitement du langage naturel, Namibie.

Introduction

Open and Distance Learning (ODL) has transformed educational accessibility. This is attributed to its combination of Information and Communication Technology (ICT) that impacts counselling and admissions processes, and overall management of students.

Educational accessibility was facilitated by the growth of online examinations that offer a platform that is both flexible and modifiable. This supports the adoption of on-going technological advancements that enable Higher Education Institutions (HEIs) to cater for global, diverse student cohorts.

Traditional face-to-face paper examinations have given way to online examinations as a result of the expansion of student enrolment and increased use of ICTs (Topuz et al., 2022; Sutherland, 2020). Such examinations offer benefits like automated grading, cost reduction, immediate feedback, and improved student performance (Alruwais,

2018). Online assessment frameworks also contribute to quality assurance and the gathering of valuable information, especially in varied and complex environments such as Namibia.

However, ODL institutions confront challenges related to modern electronic technologies (Khumalo, 2018; Ngubane-Mokiwa and Letseka, 2015).

While HEIs implemented online examinations during the COVID-19 pandemic, they often lack the scope to assess various question types (Butler-Henderson and Crawford, 2020; Das, 2021). Recent research has focused on technological upgrades and innovative online examination frameworks (Al-Hunaiyyan et al., 2021) and HEIs across the world have developed and implemented such frameworks. However, Fluck (2019) points to a paucity of literature on ODL online examination frameworks. Examination frameworks should be both innovative and user-friendly and capable of adapting to the various socio-economic backgrounds and competencies of students involved in ODL (Moore et al., 2019). Mogey and Fluck (2015) and Dawson (2016) note that online examination frameworks include commercial software and bootable systems installed on students' devices. The high costs associated with purchasing such software and systems may prevent ODL institutions from fully implementing them. Furthermore, given ODL students' diverse backgrounds and abilities in countries such as Namibia, some might be unable or reluctant to adopt these systems.

Ngqondi et al. (2021) proposed an online examination framework for use by South African universities that aims to increase accessibility to students and enhance competitiveness. The framework has yet to be implemented.

Due to poor ICT infrastructure in rural areas such as Kunene, Ohangwena, Omaheke, Otjozondjupa, Oshikoto, Zambezi, and the Kavango regions in Namibia, and societal inequalities such as educational gaps and income inequality, access to the Internet has been a challenge (United Nations, 2018). However, the majority of universities rely on web-based Learning Management Systems (LMS), which require a reliable Internet connection. Data affordability and a lack of devices pose further problems (Reddick, 2020).

Higher education institutions across the globe have embraced online digital technologies and platforms to expand the reach of education to a more geographically dispersed audience. This was facilitated by blended teaching approaches, including learning and examination methods (Fahd et al., 2021). Guardia et al. (2020) refer to examination activities conducted using digital devices and over the Internet as e-examinations. Various frameworks are used to implement e-examinations, with a focus on different activities including peer evaluation, quizzes, reviews, graded discussion forums, and simulations. Frameworks are blueprints used to help developers construct digital systems. Students can access questions remotely through an online examination framework. Trivedi et al. (2022) proposed an online examination framework to establish an electronic structure that universities and HEIs can adopt to fulfil specific examination process requirements (Al-Aqbi et al., 2021).

However, despite the widespread adoption of online examination technologies, several studies (see, for example, Kuikka et al. (2014); Fluck (2019) have identified critical gaps. These include concerns regarding security, leading to instances of academic dishonesty and plagiarism. Some frameworks prioritise authentication mechanisms to prevent cheating and impersonation (Fluck et al., 2017), while Alshammari (2020) proposed a variety of alternative online examination frameworks and architecture based on empirical evidence. A further concern is the emphasis on evaluation of knowledge attainment rather than practical application thereof. Historical shortcomings in online examination frameworks, originally designed to accommodate only multiple-choice, short-answer, and objective questions, resulted in this limitation.

Against this background, the study on which this article is based involved a scoping review to analyse existing online examination frameworks and their applicability to ODL environments in Namibia, and make recommendations on the development of the most appropriate online examination framework.

Research Objectives

The review was guided by the following objectives:

1. To gain insight into current relevant online examination frameworks for ODL.

2. To analyse the appropriateness of existing online examination frameworks for implementation in HEIs in Namibia offering ODL and the challenges encountered.

Methodology

A scoping review was conducted to investigate online examination frameworks following the methodological steps outlined by Arksey and O'Malley (2005). Scoping studies are conducted for several primary reasons, including assessing the current state of research on a specific topic, determining the need for and feasibility of a systematic literature review, synthesising and disseminating research findings, and highlighting significant gaps in the existing literature.

Armstrong et al. (2011), Levac, Colquhoun, and O'Brien (2010), and Rumrill, Fitzgerald, and Merchant (2010) acknowledged the broad and multidisciplinary nature of the online examination literature and deemed that conducting a systematic literature review with comprehensive methodological quality analysis was neither feasible nor appropriate.

The study followed the five sequential stages outlined in Arksey and O'Malley's framework (2005), namely, (1) identifying the research question(s), (2) searching for and retrieving relevant studies, (3) selecting studies that meet the inclusion criteria, (4) extracting pertinent data from the selected studies, and (5) collating, summarising, and reporting the results, with a focus on implications for policy, practice, or further research.

Search Strategy

The initial search encompassed five databases: Institute of Electrical and Electronic Engineers (IEEE), Scopus, SABINET, EBSCO Host Eric, and Google Scholar. We conducted manual searches for relevant journal articles to enhance the search. We retrieved a total of 143 papers published between 2017 and 2022.

The search utilised keywords such as "online examination framework" OR "online examination system," "online assessment frameworks" OR "online assessment systems," and "open distance learning." The reference lists of all identified articles were also examined to identify additional studies.

Study Selection

The initial step involved consolidating the search results and removing duplicates by importing them into an Excel file. Subsequently, the remaining articles' titles and abstracts were thoroughly screened. We applied specific inclusion and exclusion criteria during this screening phase to determine which studies would be considered for inclusion in the scoping review.

The inclusion criteria were: (1) articles published from 2017 onwards, and (2) clear relevance to online examination frameworks. Studies excluded from the review fell into the following categories: (1) non-English literature, (2) articles subject to systematic literature reviews, (3) publications published before 2017, (4) publications discussing eLearning and ODL without a focus on online examination frameworks, and (5) publications discussing utilisation and satisfaction with specific eLearning systems.

The second stage of the review process involved evaluating the full texts of selected articles to determine their eligibility for inclusion.

Charting the Data

Following the afore-mentioned stage, the data was extracted and the following information was included: author(s), year and location of the study, reason for the study, target population or audience, methodology/software/technologies used, framework type, use of the framework, and challenges. This information is depicted in Table 1.

Table 1: Key Characteristics of Included Articles

Author (s)	Year and location of study	Reason for the framework	Target population/ Audience	Methodology/ Software/ technologies used	Framework Type	Use of the framework	Challenges
Dharmasena and Jayakody	2022 Sri Lanka	Build a voice-based online examination framework for visually impaired students.	Visually Impaired students.	Linear Predictive coding (LPC). Mel Frequency Cepstral Coefficients (MFCC). Hidden Markov Models (HMM). Dynamic Time Warping (DTW).	Students with visual impairments can utilise this voice-based online examination framework.	It is used to read the examination questions that are displayed on the screen to the student and obtain students' responses via voice command.	None mentioned.
Eko and Essien	2022 Nigeria	Create a resilient examination framework capable of withstanding technical faults like power outages, network disruptions, and component failures while maintaining security.	Tertiary Institutions in Developing Countries.	Incremental software development model in conjunction with prototyping technique method.	Secure, fault-tolerant online examination framework.	The online examination framework restores lost time during power outages, network failures, or computer component failures. Students can resume taking the online examination upon login without loss of information.	The current framework only applies to MCQ.
Ayoub, Muhammad, Khan, M. A., and Khan, L. M.	2022 Malaysia	Propose the design of a new online examination framework.	Schools, Colleges, and Universities.	CodeIgniter and MySQL Server Technologies - HTML, CSS, PHP, JavaScript, and Bootstrap.	Online examination framework for HEIs.	The web-based online examination platform should be used by educational institutions to improve online testing.	None mentioned.
Najaah and Ahamed	2021 Sri Lanka	Design a voice-based online examination framework to help visually impaired students take the examinations online.	Visually Impaired students.	Voice interface Schools Government Universities.	Voice-based online examination framework for the visually impaired.	To allow visually impaired students to attempt to take an online examination without any human support.	A suitable benchmark dataset could not be identified to evaluate students' answers, which makes evaluating and experimenting with the system a difficult task. Voice corpus is based on US English. As a result, words pronounced may be recognised differently by the system. There is a need for noise filtering.

Sapre, Shinde, Shetta, and Badgujar	2021 India	The primary objective of the smart AI-ML-based online framework is to mitigate instances of malpractice during online examinations. This innovative framework aims to address the shortcomings of current systems and pave the way for the development of a new and improved examination platform.	University students and lecturers.	Dlib OpenCV library.	Artificial Intelligence-Machine Learning Based Smart Online Examination Framework.	Authenticate students during an examination session. Detect malpractice activities.	Only suitable for objective questions. Analysis of students' front view is difficult.
Kulkarni and Alfatmi	2021 Malaysia	Conduct online examinations using pre-installed software or a website on the intranet.	Universities, institutes.	CompareHashAndPassword GoCV Dlib	Online framework using Smart Contract for credential checking.	Conduct secure online examinations.	None mentioned.
Mohite, Patil, Borhude, and Pawar	2021 India	Ensure accessible and reliable online examinations using deep learning models for the proctoring system. Ease of use and simplicity.	Schools and Colleges.	HTML3, CSS5, BOOTSTRAP5, Django, and Python.	Proctored online examination framework.	Monitor students during the online examination session.	None mentioned.

Pandey, Kumar, Rajendran, and Bindhumadhava	2020 India	Conduct virtual scrutiny using the web-based examination.	Universities, Schools, and Colleges.	Secure streaming protocol RTMPS and WebRTC. Stream from students' devices during the examination writing process. Streaming server checking for malpractice /impersonations. OpenCV library.	An online examination framework aimed at eliminating ambiguities and ensuring fair conduct of online examinations. Makes use of a mobile-based platform to conduct exams.	Used to take online examinations from a mobile phone app. Used to facilitate supervised and unsupervised remote monitoring.	Virtual scrutiny of students is a challenge. Android phones are unable to operate both rear and front cameras at the same time.
Nandini and Uma Maheswari	2020 India	Suggested an automated descriptive answer evaluation system for online examinations.	Universities and Schools.	Django SQLite version 3 HTML version 5 CSS version 3 Bootstrap and JavaScript.	Online examination framework for grading descriptive answers. Descriptive online examination framework.	Evaluate descriptive types of answers.	Challenges are linked to the evaluation scheme, including resource-intensive processes, significant time requirements, and substantial human effort.
Das, Sharma, Rautaray, and Pandey	2019 India	Propose an automated online examination framework that allows examinees to submit descriptive answers for evaluation.	Schools and Universities.	None.	Online examination framework using Natural Language Processing to grade descriptive questions.	Grading students' responses using AI.	None mentioned.

Table 2: Key Characteristics of Articles Identified from the Reference Lists

Author (s)	Year and location of study	Rationale for the framework	Target population/ Audience	Methodology/Software/ technologies used	Framework Type	Use of the framework	Challenges
Zubairu, Mohammed, Babakano, and Anda	2021 Nigeria	Develop a model to integrate WordNet into the online examination framework for improved evaluation purposes.	Universities and Schools.	WordNet database Design science methodology was used to design the electronic online examination framework.	Framework for subjective questions.	To allow automatic processing and evaluation of students' responses.	None mentioned.
Natumanya and Nabaasa	2022 Uganda	Address the challenges experienced during pen-and-paper examinations.	Universities Students.	Design science methodology was used in the design of the electronic examination framework.	Electronic examination framework with free handwriting.	To use mobile devices such as cell phones and tablets with electronic free handwriting features.	None mentioned.

Findings

The research identified six online examination frameworks that aim to accommodate students with varying abilities from diverse geographical locations and socio-economic backgrounds, with a focus on assessing knowledge application. This section presents the findings and introduces these six frameworks, outlining details regarding their implementation or intended implementation. We also highlight any weaknesses or limitations identified.

Table 3 below presents the six online examination frameworks identified and the dates developed, as well as improved versions of the original frameworks, and the names of the developers.

Table 3: Identified online examination frameworks

Online Examination Framework	Date developed	Developer/s
1. Electronic examination Framework with free handwriting	2022	Natumanya and Nabaasa
2. Fault-tolerant web-based examination framework	2022	Eko, Eteng, and Essien
3. Framework for unsupervised online examinations	2020	Pandey, Kumar, Rajendran, and Bindhumadhava
4. Online examination framework for visually impaired students	2020	Dharmasena and Jayakody
5. Online examination framework for visually impaired students	2019	Mukul, Reshma, Srinivas, and Leelavathy
6. Natural Language Processing Automation Online Examination Framework	2019	Das, Sharma, Rautaray, and Pandey
7. Subjective online examination framework	2015	Qureshi and Rizwan
8. Online examination framework for visually impaired students	2004	Raghuraman

Online Examination Framework for Visually Impaired Students

Globally, many individuals are living with some form of vision impairment and the number of visually impaired (VI) people enrolling for courses in HEIs is increasing (NCES, 2016). Consequently, there is a need for assistive technologies to aid these students. Existing online

examination frameworks were found not to cater for VI students in ODL (Azeta et al., 2017). Research reveals that ODL institutions need to set acceptable standards to enable them to accommodate students who are VI (Liakou and Manousou, 2015). This would render education opportunities more accessible and reduce social exclusion.

In 2004, an online examination platform was developed for VI students (Islam et al., 2019). It was mainly designed to use a keyboard, which provided guidance and feedback by voice. This framework was developed as a stand-alone application that used text-to-speech and speech-to-text technology, which made it a voice-enabled online examination framework. In recent years, an updated version of the online examination framework has been proposed, aimed at addressing the challenges students often encountered with the earlier version. Rabiner and Juang (1993), cited in Koffi (2020), noted that techniques associated with Automatic Speech Recognition (ASR) were initially applied towards the end of 2015. This led to remarkable achievements in speech synthesis for creating artificial human speech. The framework could range from multiple-choice to essay questions for different subjects. The application is linked to the database used to store the online examination questions. Therefore, a framework was developed to read the questions and their different options to VI students to enable them to make an informed decision and press the option number. Once the option is selected, the framework saves the response and the next question is read to the student until all the questions are answered. A report is generated at the end of the examination.

Several weaknesses were identified in the framework, including time delays as a result of speech-to-text, which results in the student's answers being received late by the framework; poor accuracy of the data recorded by the framework; the need to manually monitor the entire online examination process; the need for the student to be accompanied by someone for assistance in opening the online examination; and the fact that the framework is only available in English.

To address the weaknesses identified by HEIs and students, Mukul et al. (2019) proposed an online examination framework deemed to produce better results than previous versions. It was not a stand-alone application

and relied on an Internet connection to function properly. The proposed framework also uses text-to-speech and speech-to-text technology.

Mukul et al. (2019) were of the view that this online examination framework offered several advantages compared to the existing framework. Visually impaired students can easily access and work through the framework and there is no need for an invigilator. The proposed framework allows students to access the online examination without assistance from start to finish, as the system provides all the required guidance. It enables students to review all answers provided to questions and make corrections before final submission. During the online examination, the student receives a message alerting him/her to the time remaining. The student uses fewer keys on the keyboard, which helps to reduce the possibility of errors. This reduces noise problems and the synthesis of voice problems.

The proposed framework architecture is embedded within Python software for programming languages (Ghimire, 2020). The Python package is built into the framework to allow the student to log in using speech-to-text and text-to-speech technology. The student uses a microphone built into the framework to provide a username and password.

In 2021, a voice-based online examination framework was proposed and introduced by Dharmasena and Jayakody (2022).

Table 4 below sets out the architecture that shows the order in which the online examination is taken by VI students following a number of steps.

Table 4: The Architecture of the Visually Impaired Online Examination

Step Number	Description
1	The initial step involves guiding the VI student to a computer equipped with headphones to receive examination instructions. He/she must input his/her login details, typically received via email after manual registration by the administrator, to access the examination framework and commence the assessment.
2	The university educator uploads the examination question papers and answer scripts before the online examination begins. A random question selection process within the database then conveys the questions to the student through a blend of text-to-speech and speech-to-text technology. In turn, the student utilises speech-to-text and text-to-speech technology to answer the online examination questions.
3	The student is able to skip questions using the "skip" voice command, with the framework saving all answers, and marking the skipped ones accordingly. To save the answers, the student issues a "submit" voice command.
4	The fourth step involves using specific voice commands: • The "next" command prompts the system to read the next question. • The "repeat" command allows the framework to repeat the question. • The "edit" command permits the framework to repeat preferred question items for editing and navigate back to skipped questions. • Lastly, the "finish" command signals the framework to conclude the examination.
5	The final step signals the end of the online examination.

When the allocated time expires, the framework automatically ends the examination. While it automatically marks multiple-choice questions (MCQs), the process takes more time for structured questions as the framework must tokenise the student's responses and compare them to the standard answers. Finally, the "log-out" key allows users to exit the framework after receiving their final score (Dharmasena and Jayakody, 2022).

Subjective Online Examination Framework

Quereshi and Rizwan (2015) developed an online examination framework where university educators submit examination questions to an online question bank. Moderators review and make recommendations for improvements or edits, and the questions and answers are stored in a data store. The framework generates examination papers based on student modules. For subjective questions, the framework uses knowledge and data mining techniques to match keywords and grades answers, with approval by educators and the Head of the Department before students access their grades.

Vimal and Kumbhana (2016) and Sychev and Prokudin (2020) highlighted that online examination frameworks require syntax and semantic evaluation to support subjective questions like sentence and descriptive answers. Zubairu et al. (2018) proposed an enhancement to Quereshi and Rizwan's framework by integrating WordNet, a semantic dictionary, to improve system performance. This is limited to the English language. The framework with semantic inclusion outperforms the previous one, using AI for automatic marking based on keyword extraction.

In comparing the existing framework with the proposed one, Zubairu et al. (2018) found that the former is easy to implement than the latter. The existing framework relies on syntax-based matching, whereas the proposed one incorporates semantic-based matching. Furthermore, the existing framework lacks a semantic dictionary and artificial intelligence (AI), both of which the proposed framework includes.

Online Examination Framework with Free Handwriting

Natumanya and Nabaasa (2022) identify various types of examination questions such as essays, multiple-choice, short answers, objective, mathematical, and diagrammatic questions. They observe that, in general, existing online examination frameworks support most question types but fall short when it comes to essays, diagrams, and mathematical questions due to limited marking technology, primarily relying on string match techniques.

To address this gap, Natumanya and Nabaasa (2022) developed a diagrammatic framework with free handwriting, structured around a seven-layer architecture. This architecture comprises two modules: the interface module, enabling student access to various components, and the communication module, responsible for linking all framework layers. Table 5 below outlines the proposed online examination framework with free handwriting, which is an ongoing project.

Table 5: The different layers of the Electronic Examination Framework with Electronic Free Handwriting

Layer	Name of layer	Description
Layer 1	**Interface layer**	This layer displays the different categories of the users handled by the framework.
Layer 2	**Authentication layer**	The administrator oversees and supervises this layer, requiring registration data for both students and university educators to grant access to the framework. This layer ensures that authorised users can access other framework layers.
Layer 3	**Examination setting layer**	At this layer, university educators must first register on the interface layer and then authenticate themselves by entering their login credentials. Once logged in, they can create a wide range of questions, including multiple-choice, essays, objective, true/false, diagrammatic, and mathematical. Each course can have multiple question sets with specified marks for each item. Educators can select questions from this pool to generate an examination script, which can be organised into sections. Each examination paper is associated with a specific course, date, and time. Once the prerequisites are met, the university can upload the examination paper, making it accessible to students through the examination attempt layer.
Layer 4	**Examination attempt layer**	In this layer, students gain access to the electronic answer book, which includes the question paper for a specific course. The proctoring, timekeeping, and free handwriting modules are activated to facilitate the examination process. Monitoring is initiated to track the progress of the examination session.
Layer 5	**Examination marking layer**	Answer scripts are submitted to the examination attempt layer, and once the timer ends the examination session, the marking process begins. University educators mark the scripts, and scores are calculated for each question item.
Layer 6	**Results layer**	The results layer receives marks from the examination marking layer and attaches them to each student's examination script. Subsequently, the scripts are stored in their respective storage spaces.
Layer 7	**Repository manager layer**	The final layer serves as data storage for university educators and students, housing their answer booklets, reports, and marks. It hosts the framework database and supports queries and requests by university educators and students.

Natumanya and Nabaasa (2022) proposed the use of mobile devices like laptops and electronic tablets with free handwriting features for online examinations. To address security concerns like impersonation and cheating, they implemented an electronic proctor system. The proposed

framework prioritises user-friendliness, replicating the experience of traditional pen-and-paper examinations through an electronic examination answer booklet designed to resemble its physical counterpart.

Fault-tolerant Online Examination Framework

Eko et al. (2022) developed a robust online examination framework for use in developing countries. It is fault-tolerant and allows concurrent online examinations across different subjects. The framework includes random assignment of MCQs from a question pool and boasts a user-friendly interface.

A standout feature is its fault tolerance, enabling examination recovery from power outages, network failures, or device issues without restarting. In case of power failure, selected responses are saved, and the timer resumes. Network failure pauses question transmission but resumes upon network restoration. Component failure allows students to switch devices with the administrator's approval.

In essence, this framework ensures uninterrupted exams despite disruptions, making it ideal for developing countries.

Framework for Unsupervised Online Examinations

Researchers like Pandey et al. (2020) introduced the "e-Parakh Unsupervised Online Examination Framework" to address concerns about invigilation during online examinations. To combat cheating and impersonation, the framework allows remote invigilation through real-time audio-visual broadcasting via mobile phones. Face recognition and secure streaming protocols are used to verify student identities and maintain examination integrity.

The process begins with student registration, following which the examination paper is loaded on their device screen. Face detection using OpenCV ensures the student's identity and a countdown timer is displayed. Students must submit their answers within the allocated time. The framework stops streaming upon submission, with recorded video available for review if needed.

Android phone hardware limitations hinder simultaneous front and rear camera use. Sapre et al. (2021) developed the AI-ML-based Smart

Online Examination Framework, an upgrade to e-Parakh, with similar features. Examiners can create question papers in CSV/DOC format and import them into the framework. OpenCV and Dlib are employed, and certain online features are disabled to prevent cheating.

Natural Language Processing Automation Online Examination Framework

Nandini et al. (2020) proposed a Natural Language Processing framework to grade subjective online examination answers. It reduces the workload for teachers and eliminates bias and human errors in grading. Answers are stored as strings, and marks are awarded based on correctness and quality by matching them with predefined keywords. Common "Stop-Words" like "the," "a," "on," "is," and "all" are excluded from the matching process, and marks are automatically calculated by the framework. The automated grading process ensures accuracy and consistency in evaluating student responses.

Discussion

The study's primary objective was to identify and explore existing online examination frameworks. This section discusses these frameworks and their relevance to ODL institutions.

VI Online Examination Framework

Each year, ODL institutions in Namibia admit VI students who appreciate the flexibility of distance education (Firat and Bildiren, 2022). They benefit from technology-driven accessibility and supportive devices like portable magnifiers, braille material, and accessible online examination frameworks (Altinay et al., 2018; Erickson and Larwin, 2016; Uusiku et al., 2021). Despite challenges such as equipment reliability, limited material, and a shortage of educators, VI students excel in online studies and perform better compared to other modes of study (Pokhrel and Chhetri, 2021). To overcome these challenges, ODL institutions can provide assistive technologies and establish special education units (Alatheeb, 2017). Specialised technologies like text-to-speech and speech-to-text enhance accessibility.

Platforms like Moodle are used by ODL institutions for online courses and assessments, although these platforms are text-based and graphical,

posing accessibility barriers (Karipi, 2020; Armano et al., 2018). While the study identified existing online examination frameworks suitable for VI students, their applicability in Namibian ODL institutions depends on factors such as device availability, strong Internet connectivity, and incorporation of speech-to-text and text-to-speech recognition technologies into Moodle platforms (Corr, 2021). Adapting existing frameworks or designing new ones requires sufficient funding for planning, design, and piloting before full implementation (Firat and Bildiren, 2022). Despite the advantage of technology-driven accessibility, VI students may still experience challenges which include limited material, unreliable equipment, and a shortage of trained facilitators, which have the potential to impact equitable learning. In this regard, the Moodle platform fails to meet the needs of VI students while adequate funding remains a crucial element of actual adaptation and support.

Subjective Online Examination Framework

Several concerns can be raised with regard to the applicability of a subjective online examination framework for ODL students in Namibia. Subjective examinations allow for diverse student responses, calling for frameworks to analyse synonyms and keywords using syntax and WordNet (Zubairu, 2018). However, variations in answer length and language proficiency present challenges. Visually impaired students might struggle due to English being a second language for many Namibian learners (Frans, 2016). While automating subjective marking reduces educator workload, it may not be fair in the Namibian context, potentially penalising students for language limitations.

One proposed solution is an AI-centered Answer Verifier (AV) to mimic human grading (Mathew et al., 2017). However, implementing such frameworks can be costly, and some argue that manual grading provides better sensitivity, allowing educators to track student performance (Ramesh et al., 2022). Automated grading may lack parameters like content relevance, idea development, and domain knowledge (Jagadabma, 2020). The balance between human grading and automation depends on various factors.

The framework's text-to-speech and speech-to-text conversion features offer advantages to VI students (Eklavvya, 2023). However, heavy

reliance on syntax matching and the cost associated with language expert input into marking schemes are drawbacks. Labour-intensive tasks, especially in ODL institutions that rely on part-time educators, may hinder implementation.

The subjective online examination framework may raise concerns for Namibian ODL students. These include issues associated with fairness, particularly for VI students with language barriers. Moreover, auto-grading frameworks may lack sensitivity, particularly to content relevance. The subjective online framework may also be costly for Namibian institutions to implement. The manual grading framework may be more affordable, but it involves high labour intensity.

Online Examination Framework with Free Handwriting

This framework offers the option for students to write online examinations using a pen and electronic board, particularly benefiting those unfamiliar with keyboard and computer screen use (Abdel-Rahman and Mohammed, 2017). It caters to learners who are still in the early stages of computer literacy.

To ensure that students have the necessary equipment, institutions can either require them to purchase e-tablets or include the cost in student fees, providing tablets as part of annual study material. However, it is important to note that this system does not accommodate VI students or those with limb disabilities.

The framework also incorporates an electronic proctor system to address security concerns like impersonation and cheating. Its user-friendly design mimics pen-and-paper examinations through an electronic answer booklet, offering a familiar experience to students.

The online examination framework with free handwriting provides hands-on solutions for online examinations. It would benefit students with poor computer literacy and has the potential to enhance security. However, it lacks inclusivity as it fails to accommodate VI and students living with disabilities. Acquisition of e-tablets may impose financial burdens on students from disadvantaged and low-income backgrounds.

Fault-tolerant Online Examination Framework

The fault-tolerant online examination framework is likely to be suitable for ODL institutions. Sakowicz et al. (2012) developed a fault-tolerant online examination engine for primary and secondary schools in Portland, with a focus on ensuring uninterrupted examination sessions, even in the face of unreliable network conditions. This architecture allows students to resume online examinations without losing previous data, addressing issues like Internet connection loss during the examination. Such interruptions could occur due to server problems on the institution's end or issues on the student's side, such as power outages.

However, ODL students, particularly in semi-urban, rural, and remote areas, often face challenges accessing technology, including the Internet (Iilonga et al., 2020). These regions may lack electricity and reliable Internet connectivity, impeding the integration of ODL with technology (Kanwar et al., 2020). While some HEIs provide Internet access to students, it's often reported to be slow, prompting students to seek alternative means of access (Iilonga et al., 2020).

Issues such as uninterrupted examination sessions and network interruptions are effectively addressed by the fault-tolerant online examination framework. However, technological and connectivity issues remain a significant barrier for students in remote rural and semi-urban areas that limit this framework's applicability to ODL institutions.

Natural Language Processing (NLP) Automation Online Examination Framework

The NLP automation online examination framework is comparable to the subjective online examination framework. It enables educators to design online essay-type questions and uses auto-grading. The auto-grading framework is designed to identify keywords and key phrases in students' responses and equipped with predefined answers and corresponding feedback. The use of NLP plays a central role in this context.

Mah et al. (2022) emphasise that NLP is a logical approach that involves using computers to understand how humans apply, comprehend, and use language. Sailunaz et al. (2018) describe NLP as the interaction

between humans through speech and text. One of the advantages of this framework is that ODL institutions can assess students using questions that require structured answers to evaluate their knowledge application. Furthermore, Chowdhary (2020) notes that various NLP software products are available, some of which are freely accessible, while others are commercially available.

The NLP automation online examination framework enables easy questions and automatic grading using keyword identification. It increases comprehension of human language, improving assessment of subjectively written responses. However, cost remains a consideration for ODL institutions.

Conclusion

This article presented a scoping review of existing online examination frameworks applicable to ODL institutions in Namibia. The findings will assist ODL HEIs that seek to implement full-scale online examinations. The article provides guidelines on different frameworks that HEIs can adopt. It shows that ODL institutions have confronted challenges in sustaining traditional pen-and-paper examinations including the cost of printing, venue hire, and transporting examination papers to different venues. Furthermore, such examinations are time consuming and there is a risk that examination question papers could be leaked. Online examinations could alleviate many, if not all, the above-mentioned challenges. The existing online examination frameworks presented in this article could be adapted for use by ODL institutions in Namibia by analysing and discussing their applicability and potential to promote inclusivity in education. The online examination framework for VI students is useful since it may enable them to gain admission to different HEIs and obtain their desired qualifications through online examination opportunities. The latest framework for VI students was designed to allow them to write online examinations without third-party assistance as it uses speech-to-text and text-to-speech technology without requiring a keyboard. Navigation is simplified by the use of a specific voice command. In addition, students can review their responses by prompting the framework to repeat them to them and in turn, make the required amendments. This framework will enable more VI students to

be admitted to HEIs and not be limited to seeking admission to special schools that offer limited study options.

The subjective online examination framework was designed to allow students to answer essay questions. It incorporates syntax and WordNet software applications that automatically grade subjective examinations online. The student's responses can also be accessed for human grading. Visually impaired students can use this framework by building in speech-to-text and text-to-speech technology. It has the same characteristics as the NLP automation online examination framework.

The online free handwriting framework was also found to be applicable to online examinations within the ODL fraternity. It is still a work in progress and proposes maintaining an online examination environment similar to the traditional pen-and-paper examination. The framework should be tested by institutions opting to adopt it before full implementation.

The fault-tolerant framework is an innovative framework that will assist ODL institutions in implementing online examinations without the need to track students that need to retake an examination due to network or power outages.

The framework for unsupervised online examinations is also applicable because it considers the use of mobile-based applications for online examinations. Students in Namibia opt to study via distance learning due to its affordability and flexibility. They can study and generate income by being employed or engaging in income-generation activities.

Recommendations

Theoretical and practical recommendations are offered based on the literature review. One of its strengths is the different online examination frameworks identified and reviewed that will assist policymakers in selecting an appropriate framework. The review also points to areas for future research.

Implications

Development of the Most Appropriate Online Examination Framework for Namibian ODL Institutions

This article adds to the body of knowledge in this field, thus enabling institutions to develop or adopt online examination frameworks that cater for students' different needs or develop an all-inclusive framework. It is recommended that ODL institutions develop an online examination framework that caters to all students' needs to avoid exclusion due to demographics, geographic location, income level and different abilities.

Development of an Online Examination System Architecture Based on the Framework

An online examination system should be designed from the framework. The architecture for the framework should be designed to include multiple features and functionalities to enable university educators to design online examination questions and in the same vein, to enable students to write the test. The online examination framework should include functional requirements (Weng, 2016). Institutions might need to adjust, modify, or extend their Moodle platforms to enable them to include the software needed to implement online examinations suitable for both able-bodied students and those with different forms of impairment. Azeta et al. (2022) introduced a Support Vector Machine (SVM) aimed at improving the assessment and examination quality of open-source systems such as Moodle used in ODL.

Configuring the Moodle Software

Moodle software is used by ODL institutions to conduct teaching, learning and online assessments. It will need to be configured to establish a reliable computing infrastructure. Because Moodle is open source, modifications might be problematic and costly in the long run. This could result in sub-optimal use of Moodle software due to the possible knowledge gap of the institutional Moodle technicians or the restrictions of the open-source licence. There is a need for ODL institutions to continue using an already existing system.

Customising Online Examination Questions to Test the Application of Knowledge

To implement any of these online examination frameworks in Namibia, ODL institutions should contextualise them by designing quality online examinations that aim to assess students' application of knowledge.

Availability of Resources

There is a need for ODL institutions to consider the resources at their disposal and those of their students. Institutions should not strain their resources by developing over-ambitious online examination frameworks. The framework should be user-friendly and cost-effective for all stakeholders.

Limitations of the Study

A comprehensive, collaborative search was undertaken with an experienced librarian and it was established that online examination frameworks were difficult to search. It is possible that not all relevant studies were identified because not all electronic databases were searched.

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