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Table of Contents

The Dual Challenge: Expanding Equal Access and Ensuring Quality in Cameroon's Higher Education

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Abstract

Cameroon's higher education sector has expanded significantly since the 1960s, growing from one federal university to eleven public and 430 private universities today, with student enrolment rising from 539 to over 350,000. This article examines the tension between increasing access and ensuring quality within Cameroon's dual Anglo-Saxon and Francophone systems. To critically assess the interplay between increased access and educational quality, we adopted a mixed-methods research strategy, including a structured survey of 109 stakeholders, supplemented by a few qualitative online interviews. The results show that while economic and population factors drive growth, poor research output (27.5% of respondents), governance problems (22%) and limited funding (14.7%) make it harder to maintain quality. Over 73% of participants believe that quality has not matched quantitative growth, with financial constraints (56%) and outdated curricula noted as key barriers. Public universities dominate rankings, yet private ones suffer from inadequate oversight, part-time staffing and low wages (e.g., 1,500–3,000 CFA per hour) (1USD=555 FCFA). The article highlights the need for curriculum reform (50.5% priority), faculty training and accreditation strengthening, decentralised governance, increased investment and quality assurance to enhancing graduate employability and equity.

Key words: Higher education access, educational quality, Cameroon, governance challenges, policy reforms

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Résumé
Le secteur de l'enseignement supérieur au Cameroun s'est considérablement développé depuis les années 1960, passant d'une seule université fédérale à onze universités publiques et 430 universités privées aujourd'hui, avec un nombre d'étudiants inscrits passant de 539 à plus de 350 000. Cet article examine la tension entre l'élargissement de l'accès et la garantie de la qualité au sein des systèmes camerounais, à la fois anglo-saxon et francophone. Afin d'évaluer de manière critique l'interaction entre l'élargissement de l'accès et la qualité de l'enseignement, nous avons adopté une stratégie de recherche mixte, comprenant une enquête structurée auprès de 109 parties prenantes, complétée par quelques entretiens qualitatifs en ligne. Les résultats montrent que si les facteurs économiques et démographiques sont les moteurs de la croissance, la faiblesse de la production scientifique (27,5 % des répondants), les problèmes de gouvernance (22 %) et le financement limité (14,7 %) rendent plus difficile le maintien de la qualité. Plus de 73 % des participants estiment que la qualité n'a pas suivi la croissance quantitative, les contraintes financières (56 %) et les programmes d'études obsolètes étant cités comme des obstacles majeurs. Les universités publiques dominent les classements, tandis que les universités privées souffrent d'un manque de supervision, d'un personnel à temps partiel et de bas salaires (par exemple, 1 500 à 3 000 CFA par heure) (1 USD = 555 FCFA). L'article souligne la nécessité d'une réforme des programmes d'études (priorité pour 50,5 % des personnes interrogées), de la formation du corps enseignant et du renforcement de l'accréditation, d'une gouvernance décentralisée, d'un investissement accru et d'une assurance qualité afin d'améliorer l'employabilité des diplômés et l'équité.

Mots-clés: accès à l'enseignement supérieur, qualité de l'éducation, Cameroun, défis de gouvernance, réformes politiques

Introduction

In Africa, access to contemporary higher education continues to be influenced by the continent's history of decolonisation, adoption of market-friendly policies and the expansion of primary and secondary education (Varghese, 2006). From the 1960s to 2014, Africa registered impressive growth in the number of higher education institutions (HEIs) that increased from less than 50 to over 1,820 (Cole, 2023, p. 63). As argued by Garisto (2025, p. 837), however, increasing access to higher education in Africa has coincided with concerns regarding the quality of education. In other words, quality has emerged as critical issue in African higher education, often resulting from inadequate funding, weak governance structures with bureaucratic ineptitudes and corruption, limited access to digital infrastructure intensified by the COVID-19 pandemic, low research output coupled with poor industry linkages, difficulty retaining talented lecturers due to brain drain and low salaries, overcrowding from rapid enrolment growth without proportional resource expansion, austerity measures imposed by international lenders like the World Bank and International Monetary Fund, unclear legal status and irregular quality control of the private higher education sector, government interference and abuses of academic freedom, inadequate infrastructure like laboratories and libraries, use of under-qualified and underpaid staff, shortage of highly qualified experts, dominance of European languages in instruction and gender inequalities, impacting overall educational equity and standards (Ahmed et al., 2025; Cole, 2023; Djomeni, 2024; Dougherty & Reddy, 2011; Mohamedbhai, 2014; Mohamedbhai, 2015; Osei-Tutu et al., 2025; Zickafoose et al., 2024). In this article, we attempt to address the specific quality concerns that have resulted from expansion to higher education in Cameroon.

Conceptual Framing

Access and quality are both complex and contested concepts in higher education. Access often symbolises the phase where students register and pay initial fees, influenced by objective factors like economic conditions, government policy, gender, race and poverty, as well as subjective factors like personal effort and family support (Wanti et al., 2022). According to Wheeldon and Veles (2024, p. 111), inclusion is equally a central tenet of access, whereas Nairz-Wirth et al. (2021, p. 3) state that "access to higher education has reached unprecedented levels with almost a third of school-leavers worldwide attending university." Unlike access, quality is difficult to define and measure, especially given its elusive and multidimensional nature (Clemons & Jance, 2024; Culbertson et al., 2024; Rind & Malin, 2024; Schindler et al., 2015).

Khoo et al. (2024, p. 65), nevertheless, hold that "common conceptualisations include quality as: excellence; value for money; fitness for purpose and transformation". Moreover, quality is purposeful (aligning with mission, vision and standards), exceptional (achieving high distinction), transformative (enhancing student learning and potential), and accountable (optimising resources with zero defects), while quality indicators include administrative (mission, legitimacy and resource management), student support (service availability), instructional (content relevance and instructor competence), and student performance (engagement and skill development leading to employment) (Schindler et al., 2015, pp. 4-6). Both access and quality seem fundamentally interconnected. For instance, enhancing access through increased enrolment and infrastructure investment can improve

quality by strengthening human capital (Cole, 2023; Nji, 2015) but can also negatively affect general education standards by straining limited resources, leading to overcrowded universities and reduced funding per student. In the case of Cameroon, we consider access as characterised by the expansion of institutional capacity and the broadening of enrolment opportunities within the public and private higher education sectors. This includes the measurable increase in the number of universities and student enrolments, boosted by elements such as demographic growth, governmental strategies, economic advancement and a heightened appetite for higher education. Access, in this case, also embodies the structural transformation within the sector, highlighting the rise of private universities alongside the coexistence of dual educational systems, namely Anglo-Saxon and Francophone.

Access transcends mere numerical analysis and is complexly influenced by considerations of equity, from regional disparities and affordability to the marginalisation of underprivileged communities. Consequently, access within the Cameroonian framework serves as both an indicator of growth and a manifestation of underlying systemic obstacles to achieving inclusive participation. On the contrary, quality includes institutional effectiveness, pedagogical standards, research productivity, governance and employment prospects. We used the input–output paradigm (Salam, 2015; Schindler et al., 2015) to assess quality. Inputs are indicative of infrastructure, personnel and financial resources, whilst outputs reflect academic supervision and accreditation, rankings, graduate employability, research output and levels of student satisfaction (Bilola & Pascal, 2016).

Access in Cameroonian Higher Education

The evolution of access to higher education in Cameroon can be categorised into two, i.e., an increase in the number of HEIs and an increase in student enrolment. As of now, Cameroon has eleven public universities in operation and 430 private universities (MINESUP, 2026). Other types of HEIs include the University Institutes of Technology (Instituts Universitaires de Technologie, IUT), Grandes écoles de Formation under State Universities (MINESUP) and other Technical Ministries: e.g., Ministère des Travaux Publics du Cameroun (MINTP), Ministère des Postes et Télécommunication du Cameroun (MINTC) (Campbell and Smar-Jabot, 2021, p. 16). The number and types of HEIs that exist in Cameroon today are remarkable in comparison to the early 1960s, when the country had only the Yaoundé Federal University (Degreume, 2024, p. 28).

The number of private HEIs are a mix of nursing schools, business schools and management schools that provide two-year HND (National Higher

Diploma) programmes often topped up by another academic year to be considered a bachelor's degree, under the mentorship of public universities (Achuo et al., 2022; Etomes & Fonkeng, 2023). One of the research participants had the following comment on this subject:

> Students can complete a two-year HND and then add a one-year programme to earn a bachelor's degree. However, this structure raises concerns about the quality of education. Some universities, particularly in countries like Germany, do not recognise this pathway as equivalent to a traditional three-year bachelor's degree. They require three consecutive years of study, which puts Cameroonian graduates at a disadvantage internationally.

Real-time data on gross tertiary enrolment remains elusive (Times Higher Education, 2024). However, various sources suggest that Cameroon is home to 350,000+ university students, with a significant majority (82% or 288,000 students in 2019) attending public universities (Campus France, 2022). The growth in student enrolment is equally noteworthy, particularly when compared to 1962, when the country had 539 students and 22 lecturers (Njeuma et al., 1999, p. 3-4). In 1970, the student population increased to 2,500 alongside 200 lecturers. This number rocketed to 18,000 students by 1985 and further expanded to 39,320 students in 1995. Nevertheless, it was only at the dawn of the 2nd Millennium that there was a significant surge in student enrolment, culminating in a total of 295,058 students registered in 2017. By the end of the 2018 academic year, the number of students rose to 316,631 (Enama, 2020). The rise in student enrolment can be ascribed to the growing population and an uptick in primary and secondary education enrolment figures as well as heightened demand for higher education.

In addition, the Anglo-Saxon system of education and the French system that co-exist in the country can be used to characterise access to higher education (Ngenge, 2020; Ngenge, 2022; Ngenge, 2023). While the existence of a dual system appears to provide students with a plethora of options in terms of the number and types of universities available, it presents a challenge depending on which of the subsystems students studied under, since it can limit their options for public universities. For example, with just two Anglo-Saxon public universities, Anglophone students who cannot study in French or afford to attend private universities must work strive harder to get admission to the University of Buea or The University of Bamenda. Major gender inequalities persist for instance, women making up only 7% of

professors, 18% of the faculty and generally less than 20% of the population in academia (Atanga, 2021, p. 28).

The distribution of HEIs in Cameroon also reveals significant regional disparities, with the Central and Littoral regions dominating with 83 and 61 institutions (comprising 55% of the total), while the Far North, Eastern and Northern regions remain severely underserved with only 5, 6 and 6 HEIs each respectively (MINESUP, 2026).

Quality in Cameroonian Higher Education

A first criterion for assessing the quality of higher education in Cameroon is university rankings as presented in Table 1 below.

Table 1: Top 15 Universities in Cameroon

No	University Name	City	Founded	Africa Rank	Global Ranking
1	University of Buea	Buea	1992	88	3460
2	University of Yaoundé I	Yaoundé	1962	92	3518
3	University of Dschang	Dschang	1993	110	3723
4	University of Ngaoundere	Ngaoundere	1982	176	5038
5	University of Douala	Douala	1977	193	5269
6	University of Mountains	Bangangte	2000	228	5879
7	University of Bamenda	Bamenda	2011	269	6524
8	University of Maroua	Maroua	2008	276	6637
9	University of Cameroon	Bamenda	2010	379	7965
10	University of Yaoundé	Yaoundé	1989	419	8923
11	University of Yaoundé II	Soa	1962	451	9595
12	Protestant University of Central Africa	Yaoundé	1989	767	12484
13	Cosendai Adventist University	Nanga-Eboko	1996	892	13179
14	Bamenda University of Science and Technology	Bamenda	1998	941	13410
15	Joseph Ndi-Samba University of South Yaoundé	Yaoundé	1996	1099	14115

Source: Compiled from EduRank 2025

The EduRank 2025 rankings show the domination of public universities in Cameroon's top 15, with the University of Buea, Yaoundé I, Dschang and Ngaoundere leading the way. This trend is consistent with that of other African countries, such as Nigeria and South Africa, where public universities frequently outperform their private counterparts in rankings due to their long history, established academic tradition, access to national research networks, international partnerships, consistent research output, alumni influence and institutional visibility (Papanthymou & Darra, 2022).

Quality in Cameroon's higher education system is also increasingly shaped by its research output and global visibility. As of 2025, Cameroon produced 32,818 scientific documents, accumulated 591,317 citations and achieved an H-index of 200, with an average of 18.02 citations per document (SCImago, 2025). These indicators place Cameroon in a mid-range position among African countries, trailing behind South Africa, Egypt and Nigeria, yet demonstrating substantial progress in regional research engagement. A significant proportion of Cameroonian publications are in English, reflecting the influence of the Anglophone subsystem of education. The Anglo-Saxon model, with its emphasis on peer-reviewed practice, academic autonomy and international collaboration, appears to enhance research visibility and citation impact. However, disparities in infrastructure, funding and policy coherence between Anglophone and Francophone universities suggest that linguistic orientation alone does not determine quality. To advance equitable access and improve research quality, Cameroon needs to invest in harmonised governance, inclusive capacity-building and strategic support for both subsystems.

On accreditation, Campbell and Smar-Jabot (2021, p. 17) show that public universities in Cameroon established by Ministerial or Presidential decree receive automatic and comprehensive accreditation for all their academic programmes. These HEIs are placed directly under the authority of MINESUP,

in accordance with Order No. 93/026 of 19 January 1993, which governs the creation of universities. In contrast, the accreditation process for private HEIs, referred to as Institutions Privées d'Enseignement Supérieur (IPES), is complex and multi-tiered. As stipulated by Order No. 01/0096/MINESUP of 7 December 2001, IPES must first obtain authorisation to operate from both MINESUP and the Commission Nationale de l'Enseignement Supérieur Privé (CNESP).

The CNESP, established by Order No. 073/CAB/PM of 6 December 2001, serves as an advisory body tasked with supporting the Ministry in the oversight, evaluation and regulation of private higher education. Despite receiving operational authorisation, IPES are not permitted to confer degrees autonomously. Instead, they are accredited to deliver MINESUP-approved programmes under the academic supervision—tutelle académique—of a designated public university, which awards the final degree. Given that accreditation is programme-specific, an IPES may operate under the tutelage of multiple state universities simultaneously, ensuring both academic conformity and quality assurance. Cameroon's accreditation framework for IPES raises concerns about regulatory enforcement and quality assurance. Of the 430 private universities currently operating, only about 257 are formally accredited by MINESUP, leaving approximately 173 institutions functioning without official recognition (MINESUP, 2026). Interviews with stakeholders reveal that the academic supervision (tutelle académique) mandated for IPES often exists only on paper, with minimal oversight from public universities. This gap between policy and practice undermines the credibility of quality assurance mechanisms and calls for stronger enforcement and institutional accountability.

Method

To examine the disparities between access and quality in Cameroon's higher education sector, we integrated both quantitative and qualitative data to ensure a comprehensive and context-sensitive analysis. Qualitative data came from published sources, constitutions, decrees, policy orientations, strategic papers and reports from institutions such as the Presidency of the Republic and MINESUP. These materials were critically analysed to understand historical trends in access and quality. Three interviews were conducted to strengthen the quality of data after the first review.

Quantitative data were collected through a structured survey administered through Google Forms in 2023, comprising 12 closed-ended and one open-ended question. The sample included 109 stakeholders, which included students, graduates, lecturers and professional services staff from both

public and private universities. While the sample size may appear modest, it is sufficiently diverse to capture key stakeholder perspectives, particularly given the exploratory nature of the topic and the challenges of accessing a broader population in a decentralised and unevenly regulated system. The sample reflects a relative balance between institutional types (63.3% public, 36.7% private) and roles within the sector though the sample mostly represents the Anglo-Saxon subsystem. Data were analysed using SPSS version 27 and NVivo, with all ethical measures taken to ensure anonymity.

Findings

Table 2 and Table 3 show a distribution of the stakeholders who participated in the survey and their institutional affiliations. The majority of the respondents, accounting, 43.1%, were graduates, with students following behind at 40.4%. Both the administrative and teaching staff each constituted a mere 8.3%. This distribution is such that the insights and views were mostly represented by those who had just finished their studies or were presently enrolled. This provides vital input on the current situation of higher education from the perspective of its main beneficiaries. Nevertheless, the comparatively diminished presence of academic staff and teachers in the study implies a gap in input from educational institutions.

Table 2: Lists of research participants (%)

	N	%
Academic staff	9	8.3
Graduate	47	43.1
Lecturer	9	8.3
Student	44	40.4
Total	109	100.0

Table 2 shows the distribution of respondents by the type of higher education institution to which they are affiliated with in Cameroon. The majority, 63.3%, are from public institutions, while 36.7% represent private ones. This indicates a higher response rate from individuals associated with public institutions, which may further reflect the larger size and reach of the public versus private sectors in Cameroon's higher education landscape. The distribution provides a diverse view from both sectors, although it is more heavily weighted towards public universities.

Table 3. Distribution of participants across public and private sector

	N	%
Private	40	36.7
Public	69	63.3
Total	109	100.0

Table 3 highlights the factors considered by respondents as primary contributors to the growth in higher education institutions and student enrolment. Economic development and the job market are seen as the main factors (32.1%), closely followed by population growth (27.5%). Government policy and support also play a significant role (21.1%), while globalisation and technological advancements are viewed as less impactful but still notable (14.7%). This suggests that broader economic and demographic factors are driving the expansion of higher education more than direct investments or dissatisfaction with the system.

Table 4. Factors driving institutional growth and student enrolment

	N	%
Economic development and job market	35	32.1
Investment for better education and job opportunities	1	0.9
Foreign investment and partnerships	3	2.8
Globalisation and technological advancements	16	14.7
Government policy and support	23	21.1
Population growth	30	27.5
Fear of unemployment and staying at home	1	0.9
Total	109	100.0

In response to the first question on the state of higher education (Table 4), the majority of respondents (55%) rate the current state of higher education as "good" in terms of both access and quality. Nevertheless, some consider as "subpar" (22%) or "extremely subpar" (7.3%). The lack of any "excellent" evaluation and a very small proportion considering it "very good" (15.6%) means that there is much potential for improvement, particularly in terms of enhancing quality to keep up with the growth.

Table 5: State of higher education in Cameroon

	N	%
Very poor 1	8	7.3
Poor 2	24	22.0
Good 3	60	55.0
Very good 4	17	15.6
Excellent 5	0	0.0
Total	109	100

Table 5 reveals that the main obstacle to improving educational quality in Cameroon, despite growth in enrolment, is poor research, innovation, and professional development (27.5%). The low quality of the sector is partly attributed to challenges emanating from governance and management. One of the stakeholders in the survey said "Cameroon's higher institutions lack management and proper supervision and follow-up of staff." Following limited funding (14.7%) issues of access, equity and diversity (13.8%), governance and management (22.0%) are reported to have a significant impact on quality.

Table 6: Factors that hinder improvement in educational quality (%)

	N	%
Dual character of the educational system (Anglo Saxon and French systems)	17	15.6
Governance and management	24	22.0
Limited access, equity and diversity	15	13.8
Limited funding	16	14.7
Poor research, innovation and professional development	30	27.5
Unregulated nature of private higher education sector	7	6.4
Total	109	100.0

With just two governments since independence and the concentration of power in the hands of presidents, the educational sector has not been spared. Despite immense efforts since independence to expand access to higher education for everyone, the quality remains deficient. This is as a result of the controversy surrounding the recognition and preservation of the two existing subsystems (Konings, 2005; Ndille, 2018), the appointment of academic leadership through presidential, prime ministerial and ministerial

decrees (Ngenge, 2020), conflicts between academic and student leadership over management, finances and freedoms (Chimanikire, 2009). Another major argument is advanced by Degreume (2024, p. 34), who states:

> In a bid to offer educational opportunities nationwide, the majority of public universities have adopted bilingual instruction in both English and French. While this bilingual education model holds advantages for the internationalisation of higher education, enabling graduates to seamlessly integrate into the global market, the pool of students proficient in both languages remains limited. Disparities in the knowledge levels of applicants from different regions often pose challenges during the enrolment process. To mitigate potential political tensions between regions, universities have historically admitted all applicants meeting basic admission criteria. Unfortunately, this approach has inadvertently led to a decline in educational standards.

Cameroon's higher education governance is shaped by a highly centralised administrative framework; wherein decision-making authority resides with the central government and its line ministries. As Ngenge (2020) observes, "Cameroon's centralised administrative system requires the approval of the central government, represented by line ministries, which has implications for university governance and management." This structure raises concerns about institutional autonomy and the transparency of leadership appointments. Although official policy stipulates that academic leaders, including rectors, vice-chancellors, faculty deans, department heads, registrars and inspectors, are to be selected based on merit, practice shows that political affiliation plays a significant role in these appointments. Specifically, Ngenge (2020) notes that the majority of university administrators are members of the Cameroon People's Democratic Movement (CPDM), casting doubt on the meritocratic nature of the selection process. Furthermore, a participant's remark that "if Southern Cameroons, aka Ambazonia, finally achieves the restoration of statehood, then the quality and quantity of education will be best as compared to LRC" demonstrates the broader socio-political dynamics influencing perceptions of educational equity and quality. This sentiment reflects deeper regional tensions and aspirations, which may have indirect implications for the governance and performance of educational institutions, as alluded to in Table 6.

Table 7: Rating of accessibility, equity and governance

	N	%
Very poor 1	8	7.3
Poor 2	34	31.2
Good 3	54	49.5
Very good 4	11	10.1
Excellent 5	2	1.8
Total	109	100.0

Access, equality and diversity are part of the crucial factors affecting the higher education sector (Njie, 2019). A number of the research participants highlight the need for "adequate feedback mechanisms [...] to improve the functioning of educational systems in Cameroon." Access is also limited by "inadequate information concerning certain fields in higher education and inadequate government subsidisation in public and private higher education."

> In state universities, tutorials often involve a single lecturer addressing a class of up to 1,000 students, which defeats the purpose of personalised support. In contrast, when I was a student at the University of Dschang, tutorials were conducted in smaller groups with PhD students assisting, which was far more effective. In private universities, tutorials are often underfunded, with lecturers allocated minimal hours at reduced pay rates, further compromising quality. What is the source here?

It is indeed the case that private HEIs can provide a superior educational experience when subjected to appropriate oversight, as proven by evidence from Ethiopia, Kenya and South Africa. In these contexts, effective regulation, adaptable curricula, favourable staff-to-student ratios and comprehensive pedagogical training contribute to their success (Tamrat & Teferra, 2025; Mireku & Bervell, 2023; Opuda-Asibo, 2024). However, the circumstances in Cameroon present a more intricate scenario, where most private universities, especially those functioning without official authorisation, predominantly depend on part-time lecturers from public universities or hire under-qualified staff to address staffing deficiencies. Private universities also provide paltry remuneration, which in average amounts to c. 1,500 FCFA (under three USD) an hour. As a result, several lecturers are forced to teach at various universities to simply sustain a monthly wage. Thus, a

mere reduction of class sizes may not necessarily guarantee better quality of education as demonstrated elsewhere.

The 2023 Law on Higher Education Policy lays the foundation for accreditation, quality assurance and regulatory enforcement, which, if implemented well, might substantially enhance the operating efficiency of duly registered private universities. In other words, although the private higher education sector has the potential for excellence, its realisation depends not only on rigorous governmental regulation but also explicit accrediting processes and the consistent enforcement of standards across all institutions.

Table 8: Adequacy of current financing mechanisms for quality improvement

	N	%
No	81	74.3
Yes	28	25.7
Total	109	100.0

Table 8 reveals that a significant majority of respondents, 74.3%, are of the opinion that current financing mechanisms for higher education fails to address quality issues adequately. This indicates a widespread concern over the adequacy of funding and its impact on the quality of higher education, and a consensus on a favourable financial reform to scale up investment to the sector.

A lack of adequate funding presents a significant challenge for both public and private universities. The deficiency in financial resources significantly impedes research initiatives, infrastructural advancements and the acquisition of competent personnel (Bloom et al. 2014). The situation is aggravated by corruption permeating multiple tiers of decision-making, alongside a centralised and fragmented political framework that wields significant power over policy reforms and the appointment of leaders in higher education (Guiaké et al. 2021; Guiake & Zhang Tianxue, 2019; Ngenge, 2020). The political dynamics, combined with bureaucratic obstacles and administrative delays, consequently, undermines the quality of education in universities, professional schools and technical colleges. This situation is further exacerbated by inadequate research capabilities, dubious admissions procedures, flawed examination systems and the graduation rates of students (Ngenge 2020; Ngenge & Tazoacha 2023).

Table 9: Preferred policy framework to address quantity-quality disparities

	N	%
Encourage research and better technology	1	0.9
Enhance curriculum standards	55	50.5
Elevate field studies and practicals as top priorities	1	0.9
Increase faculty training	31	28.4
Strengthen the level of training in secondary education	1	0.9
Strengthen accreditation processes	20	18.3
Total	109	100.0

Table 9 indicates that the majority of respondents (50.5%) are of the opinion that enhancing curriculum standards is the most critical policy framework or initiative to address disparities between the quantity and quality of higher education. The next most significant areas identified are increasing faculty training (28.4%) followed by strengthening accreditation processes (18.3%). The emphasis on curriculum and faculty suggests a focus on improving the core educational content and teaching quality, while accreditation is perceived as important for maintaining high educational standards. Less emphasis is placed on research, technology, field studies and secondary education improvements, indicating that the priority is on foundational changes within HEIs.

Table 10: Satisfaction with growth of higher education institutions and student enrolment

	N	%
Not satisfied at all 1	13	11.9
Less satisfied 2	34	31.2
Satisfied 3	40	36.7
Very satisfied 4	19	17.4
Completely satisfied 5	3	2.8
Total	109	100.0

Table 11: Alignment of educational quality with growth

	N	%
No	80	73.4
Yes	29	26.6
Total	109	100.0

Tables 10 and 11 present insights into stakeholders' satisfaction with the growth of higher education institutions and whether educational quality has kept pace with enrolment growth in quantity. Table 10 indicates that the majority of respondents feel satisfied(36.7%) with the growth, yet a significant portion are dissatisfied (43.1% combined for ratings 1 and 2). Table 11 indicates that a large majority (73.4%) think that educational quality has not kept up with the enrolment growth, highlighting a significant disparity between the growth of institutions and the improvement in educational standards. This suggests a pressing need for reforms focused on enhancing quality rather than merely increasing quantity.

In Cameroon, the quality of education is a crucial concern that has been addressed in several policy papers cited in this study, accounting for 15.4% of them. For instance, the ADEA Working Group on Higher Education (2006) report discusses the need to reform the national system of higher education to improve its quality. It identifies the issues faced by higher education institutions in the country and outlines the steps that must be taken to enhance the quality of education. These papers shed light on the country's efforts to improve the quality of education. For example, the first document, "A Report of the ADEA Working Group on Higher Education: Reforming a National System of Higher Education: The Case of Cameroon", emphasises the need to reform the national system of higher education and outlines the issues faced by higher education institutions in the country to enhance the quality of education.

Table 12: Specific challenges faced in accessing quality higher education

	N	%
Financial constraints	61	56.0
Infrastructure issues	16	14.7
Limited programme options	30	27.5
Equipment and facilities for practical work	1	.9
Practical sessions for science education	1	.9
Total	109	100.0

Table 12 highlights the challenges faced by individuals in accessing quality higher education. The majority (56%) cite financial constraints as the primary obstacle, followed by limited programme options (27.5%) and infrastructure issues (14.7%). Less than 1% mention issues related to the quality of equipment and the rarity of practical sessions, indicating these are fewer common concerns among the respondents. This resonates with the following statement from one of the research participants:

> In higher education institutions, just like the University of Buea, students are sometimes diverted from their options and made to go in for unwanted choices (programmes). This poses a problem between consumer and producer, and the consumer (student) ends up suffering more because they either drop out or unwillingly deviate from their dreams. I think it is an issue that needs to be handled.

Table 13: Key changes to enhance higher education quality

	N	%
Faculty development programs	27	24.8
Study techniques supervision	1	.9
More practical lessons	1	.9
Updated curriculum	52	47.7
Upgraded facilities	27	24.8
Miscellaneous	1	.9
Total	109	100.0

Table 13 synthesises respondents' perspectives on key priorities for enhancing quality of higher education. Curriculum reform emerged as the most pressing concern, mentioned by 47.7% of participants, signalling widespread dissatisfaction with outdated content. Faculty development and infrastructural improvements followed, at 24.8% each, highlighting the dual importance of pedagogical capacity and learning environments. In contrast, fewer respondents emphasised study techniques or systemic restructuring, suggesting that foundational reforms, particularly in curriculum and teaching quality, are perceived as more transformative.

Qualitative responses reinforced this viewpoint, with participants criticising government inertia in updating curricula and lamenting the erosion of meritocracy and research capacity. Several accounts pointed to the disconnect between academic programmes and labour market demands. For instance, while internships are formally required, some students circumvent the process through fraudulent practices, undermining skill acquisition and employability. Others advocated for experiential learning through workshops and training programmes, arguing that institutions must move beyond content delivery to foster practical competencies. Recurring themes include the need for entrepreneurial education, early exposure to vocational subjects such as agriculture, and alignment between academic offerings and societal needs. Respondents called for a paradigm shift toward competency-based models that empower graduates to become job creators rather than job seekers. This disconnect between education and employment is reflected in national statistics as nearly 30% of university graduates in Cameroon remain unemployed or underemployed (Ngesi et al., 2024; World Bank, 2022).

Discussion

This article offers a critical analysis of the dual challenge facing Cameroon's higher education sector: expanding access while ensuring quality. Drawing on mixed data from students, graduates, lecturers and academic staff across public and private universities, the findings reveal that institutional growth and enrolment increases are primarily driven by economic development, population growth and labour market demand. These trends mirror broader patterns observed across sub-Saharan Africa, where higher education expansion has been a strategic response to demographic pressures and economic aspirations (Etomes & Fonkeng, 2023; Tamrat & Teferra, 2025).

However, the expansion has not been complemented by proportional improvements in quality. Respondents identified poor research output, limited innovation, inadequate professional development, governance inefficiencies and chronic underfunding as key barriers to quality enhancement. These findings align with studies from Ghana and Nigeria, where similar constraints have turned to undermine institutional performance despite increased access (Mireku & Bervell, 2023; Okebukola, 2021). In Cameroon, the coexistence of Anglo-Saxon and Francophone subsystems adds complexity to governance and curriculum harmonisation, often resulting in substandards and uneven resource allocation (Konings, 2005; Simo, 2017).

The perception of quality among 71% of respondents, who rated it as "good" or "very good", requires careful interpretation. Given that the majority of

respondents were students and recent graduates, this optimism may mostly reflect relative satisfaction with personal experiences rather than systemic benchmarks. As Schindler et al. (2015) and Harvey and Green (1993) argue, quality in higher education is multidimensional and contested, encompassing input (e.g., infrastructure, staffing), process (e.g., pedagogy, governance) and output (e.g., employability, research impact). The seeming discrepancy between perceived and actual quality give emphasis to the need for improved awareness and transparency in quality assurance procedures.

The article also reveals disparities in quality assurance across institutional types. While some private universities demonstrate responsiveness through flexible curricula and smaller class sizes, many operate with little or no oversight, relying heavily on part-time teaching staff from public universities or often underqualified staff who are usually underpaid. This undermines the assumption that private universities inherently offer greater quality. Comparative evidence from Ethiopia and Kenya indicates that when regulatory frameworks are strong, supported by institutions such as the Higher Education Relevance and Quality Agency (HEQRA) and the Commission for University Education (CUE) respectively, private universities can equal or surpass public universities in performance regarding curriculum relevance, pedagogical innovation, and graduate employability (Opuda-Asibo, 2024; Tamrat & Teferra, 2025). The 2023 Law on Higher Education Policy in Cameroon establishes a National Accreditation and Quality Assurance Commission, which, if properly executed, may replicate similar achievements (Republic of Cameroon, 2023). However, the continued existence of unlicensed universities functioning outside this framework remains a major concern.

Governance challenges further complicate quality improvement. The appointment and dismissal of university administrators through presidential decrees, such as Decrees No. 2022/238 and No. 2023/040, raise questions about institutional autonomy and merit-based leadership (Ngenge, 2020). These practices may incentivise political loyalty over academic stewardship, affecting strategic planning and accountability. Despite changes resulting in the establishment of additional state institutions to alleviate congestion, they have insufficiently addressed other critical issues, including faculty development and delays in research funding. Comparable governance issues have been recorded in Zimbabwe, where politicised leadership nominations have impeded institutional efficacy (Ngwenya & Phuthi, 2022).

Structural issues, like the cohabitation of Anglo-Saxon and Francophone subsystems, impact curricular alignment and institutional recognition;

nonetheless, they need distinct empirical studies outside the purview of this article. These results emphasise the need for targeted changes emphasising quality above mere growth. Priorities include enhancing quality assurance, investing in faculty development and fostering transparent governance to guarantee that expanded access results in significant benefits. Future studies may also use graduate employment trend (tracer) , employer input and institutional performance measures to evaluate the sector's responsiveness and effectiveness.

In the Discussion Paper and Country Case Studies "The Evolving Regulatory Context for Private Education in Emerging Economies" by Bjarnason, Patrinos and Tan (2008), Brigitte Matchinda discusses the regulatory framework governing private universities in Cameroon, specifically referring to decree N° 2001 / 832 / PM of September 19, 2001, which established the common rules applicable to private institutions of higher education (PIHE), and law N° 01 / 0096 / MINESUP of December 7, 2001, which clearly defines the requirements for the establishment and operation of PIHE in the country. This legal instrument seems to provide the basis for oversight of private universities in theory, yet practice continues to be marred by issues of corruption. Consequently, the important contributions of private universities to the MINESUP's mission, which is to produce, organise, and disseminate scientific, cultural, and professional knowledge and ethical values for the development of the nation, are clearly watered down by the non-application of regulatory texts governing the functioning of these institutions, which often leads to the recruitment of unqualified staff. Another major concern is that many private universities, professional schools and teacher training colleges in Cameroon lack adequate government monitoring and evaluation, raising concerns about the efficiency of quality assurance mechanisms (Varghese, 2006). In particular, the quality of the programs provided, as well as their market-driven inclinations, results in a prioritisation of graduation numbers above educational quality. Programme length, such as two-year HNDs [spell it out], a near absence of reading materials, underqualified staff and examination malpractices are all visible signs of poor educational quality. For instance, relying on academics from public universities to teach part-time at private universities may reduce their efficiency, raising questions about the overall quality of teaching at both public and private institutions.

Conclusions

This article argues that access to higher education in Cameroon has expanded significantly since independence, though quality has not kept pace with this quantitative growth. Challenges such as inadequate funding, unauthorised private universities, and low lecturer wages and outdated curricula continue

to undermine educational standards with corresponding effects on graduate employability. Therefore, curriculum modernisation, faculty development and robust oversight, especially for IPES, are essential to address these issues. Decentralised governance and increased investment remain critical to align education with sustainable development goals, ensuring both equity and quality. Regularising the Anglo-Saxon and Francophone subsystems and tackling regional disparities could allow Cameroon to capitalise on its bilingual advantage, strengthening its role in the African knowledge economy.

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ICT Use as a Determinant of Knowledge Management Effectiveness in Higher Educational Institutions in Tanzania: A Systematic Review

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Abstract

The integration of Information and Communication Technology (ICT) in higher education is increasingly recognised as a critical factor influencing knowledge management (KM) effectiveness. This systematic review examines stakeholder perceptions of ICT use and its impact on KM practices within higher education institutions (HEIs), with a particular emphasis on the Tanzanian context. A comprehensive analysis of 25 empirical studies published between 2010 and 2025 was conducted. Findings reveal that stakeholders widely view ICT as a key enabler of KM effectiveness by enhancing knowledge sharing, collaboration, and access to information. However, persistent barriers -such as disparities in ICT access, limited training, and resistance to change-continue to hinder effective ICT integration. The review further highlights the significant roles of organisational support, cultural attitudes, and human resource factors in shaping stakeholder perceptions and ICT adoption. These insights provide practical guidance for policymakers, nstitutional leaders, and researchers to develop inclusive, context-sensitive ICT strategies that improve KM outcomes in higher education.

Key words: Knowledge Management, ICT, Higher Education, Tanzania, Systematic Review

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Résumé
L'intégration des technologies de l'information et de la communication (TIC) dans l'enseignement supérieur est de plus en plus reconnue comme un facteur essentiel influençant l'efficacité de la gestion des connaissances (GC). Cette revue systématique examine les perceptions des parties prenantes concernant l'utilisation des TIC et son impact sur les pratiques de GC au sein des établissements d'enseignement supérieur (EES), en mettant particulièrement l'accent sur le contexte tanzanien. Une analyse exhaustive de 25 études empiriques publiées entre 2010 et 2025 a été menée. Les résultats révèlent que les parties prenantes considèrent largement les TIC comme un catalyseur clé de l'efficacité de la GC, car elles améliorent le partage des connaissances, la collaboration et l'accès à l'information. Cependant, des obstacles persistants – tels que les disparités dans l'accès aux TIC, la formation limitée et la résistance au changement – continuent d'entraver une intégration efficace des TIC. Cette revue met également en évidence le rôle significatif du soutien organisationnel, des attitudes culturelles et des facteurs liés aux ressources humaines dans la formation des perceptions des parties prenantes et l'adoption des TIC. Ces enseignements fournissent des orientations pratiques aux décideurs politiques, aux dirigeants d'établissements et aux chercheurs pour élaborer des stratégies TIC inclusives et adaptées au contexte, visant à améliorer les résultats de la gestion des connaissances dans l'enseignement supérieur.

Mots-clés: Gestion des connaissances, TIC, Enseignement supérieur, Tanzanie, Revue systématique

Introductiion
Knowledge Management (KM) has become a vital discipline for enhancing organizational performance by enabling the effective identification, sharing, and application of knowledge. In higher education institutions (HEIs), KM supports academic development, research innovation, and institutional effectiveness (Asad, Rind, and Abdulmuhsin, 2022; Nanjundeswaraswamy and Swamy, 2022). The integration of Information and Communication Technology (ICT) has further transformed KM practices, facilitating efficient knowledge sharing, collaboration, and communication within academic settings (Guzman, Zuluaga-Ortiz, Barrios-Miranda, and Delahoz-Dominguez, 2022; Lubuva, Ndibalema, &Mbwambo, 2024; Omanyo and Ndiege, 2025).

Globally, developed countries have demonstrated advanced adoption of ICT-supported KM systems. For example, multinational corporations like Google and IBM utilize sophisticated KM platforms to streamline knowledge exchange and data-driven decision-making (García-Álvarez,

2015). Foundational research emphasizes that effective integration of technological systems and organizational processes is critical for successful KM implementation (Gupta, Iyer, & Aronson, 2000). Subsequent empirical studies demonstrate that ICT-enabled systems enhance knowledge creation, sharing, and innovation within higher education contexts (García-Álvarez, 2015; Omanyo and Ndiege, 2025). More recent scholarship further highlights the strategic importance of KM in improving institutional performance and fostering adaptability in dynamic academic environments (Raut et al., 2024).

In contrast, developing countries face complex challenges in ICT adoption and KM implementation due to infrastructural limitations, financial constraints, and skill shortages (Arakpogun et al., 2023; Ayiro, Muriithi, & Munyao, 2023; Omona, 2010). For instance, universities in Kenya have introduced digital libraries and e-learning platforms to support KM, yet national strategies often remain fragmented (Mwangi et al., 2023). Similarly, in Brazil, cultural and infrastructural barriers have limited the broader adoption of KM initiatives despite efforts by large corporations (Silva and Mendes, 2022).

In Tanzania, HEIs are at an early stage of KM system development, with ICT integration offering significant opportunities to enhance knowledge sharing and organizational learning (Charles & Nawe, 2018; Namayala, Kondo, & Mselle, 2024; Mosha & Ngulube, 2025). However, widespread adoption is hindered by infrastructural deficits, inadequate policy frameworks, and limited funding (Fussy, 2025; Mosha, 2025). Specific efforts at institutions such as the University of Dar es Salaam and the implementation of AI-driven teaching approaches in health training institutions illustrate ICT-driven KM potential, yet challenges remain in scaling these innovations effectively (Mwogosi & Simba, 2025; Mosha, 2025).

The COVID-19 pandemic accelerated digital transformation worldwide, highlighting both opportunities and gaps in ICT-supported KM in education (Nagaraja & Davidson, 2024; Qazi, Sharif, & Akhlaq, 2024; Shao et al., 2023). In Tanzania, although stakeholder attitudes toward ICT are generally positive, usability problems, inadequate training, and weak organizational support continue to undermine KM system effectiveness (Mtebe, 2020). These issues emphasize the critical role of stakeholder perceptions faculty, administrators, students, and external partners in influencing ICT adoption and KM outcomes.

The Technology Acceptance Model (TAM) (Davis, 1989; Patrick, 2018) offers a useful framework for exploring how perceived usefulness and ease of use affect user acceptance of ICT tools in KM. Despite growing recognition of

ICT's role in enhancing KM, empirical research focusing on stakeholder perceptions within Tanzanian higher education, particularly in private universities, remains limited. This systematic review aims to synthesize existing evidence on how stakeholder perceptions of ICT use influence KM effectiveness in Tanzanian HEIs, addressing this important research gap.

Therefore, this systematic review aims to synthesise existing empirical evidence on stakeholder perceptions of ICT use and its influence on KM effectiveness in HEIs. Specifically, the review addresses the following objectives:

i. identify the ICT tools and platforms highlighted in existing studies as enablers of KM in HE;
ii. examine the reported barriers to effective ICT use that influence KM in HEIs;
iii. explore environmental and organisational support factors reported to affect ICT use for KM; and
iv. analyse how human resource-related factors are perceived to influence KM in the context of ICT use.

Purpose of the Study

The purpose of this systematic review is to explore stakeholders' perceptions of ICT use and its influence on KM effectiveness in HEIs. By synthesising empirical evidence from recent studies, this review aims to provide insights into how ICT enables or hinders KMpractices, considering environmental, organisational, and human resource factors.

Literature Review Process

This study employed a systematic review methodology to explore stakeholder perceptions of ICT and its impact on KM effectiveness in HEIs in Tanzania. A thorough literature review was conducted using reputable academic databases, including Google Scholar, Scopus, ERIC, Web of Science, JSTOR, African Journals Online (AJOL), and Tanzanian institutional repositories for identification purposes, with only peer-reviewed empirical studies retained for final inclusion. This approach ensured comprehensive coverage of relevant studies, capturing the most pertinent literature aligned with the evolving landscape of ICT in education (Adhikari & Shrestha, 2023; Omanyo & Ndiege, 2025). Key search terms such as "stakeholder perceptions," "Information and Communication Technology," "knowledge management effectiveness," and "higher education" were utilised to ensure relevance and specificity.

The timeframe of 2010–2025 was selected to reflect recent developments in ICT-supported KM, particularly given the rapid technological advancements and evolving stakeholder roles in higher education over the past decade. Older studies were excluded to maintain focus on literature relevant to contemporary ICT tools, platforms, and academic environments.

Revised Study Selection and Screening

The initial search yielded 512 studies, from which 76 duplicates were removed, resulting in 436 records for screening. Titles and abstracts were assessed based on predefined inclusion criteria, focusing on stakeholder perceptions and the role of ICT in KM within educational contexts. After screening, 325 studies were excluded for not meeting these criteria. A detailed full-text assessment was then performed on 111 articles to evaluate methodological quality and relevance. Eighty-six articles were excluded at the full-text review stage due to failure to meet the predefined inclusion criteria. Ultimately, 25 empirical studies met all inclusion requirements and were included in the final synthesis.

This rigorous screening and selection process ensured methodological transparency and provided a credible foundation for understanding stakeholder experiences and institutional dynamics related to ICT-supported KM.

Quality Assurance Measures

To uphold academic rigour, studies from predatory or non-peer-reviewed sources were systematically excluded. Journal credibility was verified through editorial board credentials, indexing status, and peer review transparency (Caffrey et al., 2022). The review included only English-language papers to ensure consistency in analysis. To assess methodological soundness, the following quality appraisal tools were applied: the Critical Appraisal Skills Programme (CASP) checklist for qualitative studies, the Cochrane risk of bias tool for quantitative studies, and the Mixed Methods Appraisal Tool (MMAT) for mixed-methods research (Aithal & Aithal, 2020; Machado et al., 2022; Millidonis et al., 2024).

This layered quality control process not only ensured methodological integrity but also strengthened the reliability and relevance of the findings to the Tanzanian higher education context.

Methodology

Research Paradigm

This systematic review adopts the interpretivist paradigm, which aligns with the exploratory nature of the study. The interpretivist approach emphasizes

understanding the subjective experiences and perceptions of stakeholders regarding ICT use and its influence on KM effectiveness in HEIs. This paradigm supports qualitative synthesis and thematic analysis, focusing on the meanings and contexts behind empirical findings rather than purely quantitative measurement.

Types of ICT Used in the Study

This study focuses on several key types of ICT supporting KM in HEIs. Learning Management Systems (LMSs) are broadly categorized into open-source and proprietary platforms. Open-source LMSs such as Moodle, promoted for collaborative and accessible learning, have been institutionalized in Tanzanian HEIs (Namayala, Kondo, & Mselle, 2024; Guzman et al., 2022). Proprietary LMSs, including Blackboard and Canvas, emphasize scalability and integrated support aligned with commercial ideologies (Jumba, Bundi, & John, 2020; Omanyo & Ndiege, 2025).

In addition, communication tools like Microsoft Teams and Zoom play pivotal roles in facilitating collaboration and knowledge sharing. These platforms are shaped by ideologies prioritizing enterprise integration, user accessibility, and ease of use (Ayiro, Muriithi, & Munyao, 2023; Mosha, 2025; Shao et al., 2023).

Recognizing the founders and underlying ideologies of these ICT tools helps to understand how stakeholder perceptions and adoption behaviours are influenced within the context of KM in HEIs.

Data Synthesis and Analysis

The selected studies underwent qualitative synthesis using content analysis, focusing on identifying common themes and patterns regarding how stakeholder perceptions of ICT affect KM effectiveness in higher education (Elezi and Bamber, 2022; Omanyo & Ndiege, 2025). Data extraction and citation management were facilitated using Mendeley software, which provides an integrated platform for organizing research articles and generating bibliographies efficiently. This ensured consistency and accuracy throughout the review process.

The included studies employed diverse methodologies, ranging from qualitative case studies to quantitative surveys and mixed-methods approaches. This methodological diversity enhanced the comprehensiveness of the review and allowed for a nuanced understanding of stakeholder perceptions across various higher education contexts (Ayiro et al., 2023; Alghail, Abbas, & Yao, 2023).

Characteristics of Included Studies

The systematic review methodology applied in this study, characterized by rigorous study selection and methodological diversity, provides a comprehensive understanding of stakeholder perceptions of ICT's role in enhancing KM within Tanzanian HEIs. The 25 included studies exhibited considerable variation in sample sizes, ranging from small qualitative investigations with as few as 15 participants to large quantitative surveys involving over 1,000 respondents. This variation strengthens the generalizability of the findings, with larger samples providing robust insights into stakeholder perspectives on ICT adoption and KM practices (Omona, 2010; Namayala, Kondo, & Mselle, 2024).

Geographically, the studies reflect diverse regions of Tanzania, including Dar es Salaam, Mwanza, Arusha, and Morogoro. This regional diversity captures varying levels of ICT infrastructure, institutional resources, and policy implementation, all of which influence stakeholder experiences and KM outcomes (Mtebe, 2020; Lubuva, Ndibalema, & Mbwambo, 2024).

The thematic focus of the studies encompassed multiple KM dimensions, including knowledge sharing, collaboration, organizational learning, and technological acceptance. The inclusion of both sector-specific and broad analyses enriches the overall findings by illustrating how ICT-supported KM manifests across different institutional and contextual settings (Nanjundeswaraswamy & Swamy, 2022; Omanyo & Ndiege, 2025). The article selection and screening process, including the number of records identified, screened, excluded, and included, is summarized in Figure 1 below. This process follows the PRISMA 2020 (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework developed by Page et al. (2021), which promotes transparency, completeness, and consistency in systematic reviews and ensures a rigorous and reproducible review process.

Figure 1: Framework of Support for DGA Development

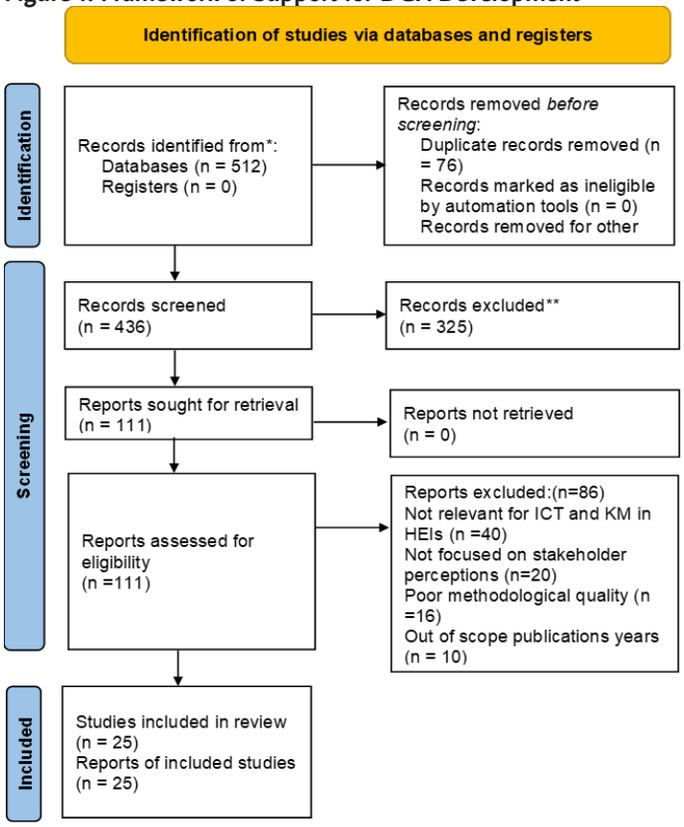

Figure 1: PRISMA flow diagram depicting the selection process for articles from 2010 to 2025

Note: Adapted from The PRISMA 2020 statement: An updated guideline for reporting systematic reviews, by Page et al., (2021).

Results and Discussions

This section presents the findings of the systematic review, highlighting key themes, trends, and gaps identified in the existing literature. The results are discussed in relation to the research objectives and existing studies, providing critical insights into stakeholder perceptions of ICT use and its influence on KM effectiveness within HEIs. The discussion also reflects on the implications of these findings for practice, policy, and future research.

Table 1: ICT Tools and Platforms as Enablers of KM

ICT Tools/ Platforms	Role in Knowledge Management	Key References
Learning Management Systems (e.g., Moodle, Blackboard)	Enhance knowledge sharing, improve accessibility, increase student engagement, and support flexible, interactive learning environments	Mtebe (2020); Lubuva et al. (2024); Guzman et al. (2022); Dewah and Sibanda (2022)
Communication Platforms (e.g., WhatsApp, Zoom)	Enable real-time feedback and interactive learning	Mwombeki et al. (2023)
Cloud-based Collaboration Tools (e.g., Google Drive, Microsoft Teams)	Support improved communication, collaboration, and inclusive learning environments through shared access to resources	Mosha (2025); Namayala et al. (2024); Vega Martinez et al. (2023)

In relation to Objective 1, the analysis reveals that stakeholders widely recognize several ICT tools and platforms as key enablers of effective KM within HEIs. Table 1 summarizes the principal tools identified across the reviewed studies. Learning management systems, communication platforms, and cloud-based collaboration tools were consistently associated with enhanced communication, collaboration, and knowledge-sharingpractices among students, faculty, and administrative staff.

For example, Mtebe (2020) demonstrated that platforms such as Moodle enhance knowledge sharing, accessibility, and student engagement within Tanzanian universities. Moodle's design supports flexible and interactive learning environments that facilitate both formal and informal knowledge exchange. This aligns with findings by Lubuva, Ndibalema, and Mbwambo (2024), who emphasized the role of ICT-integrated learning in improving knowledge acquisition and management. Similarly, Guzman, Zuluaga-Ortiz, Barrios-Miranda, and Delahoz-Dominguez, (2022) reported that ICT adoption strengthens knowledge distribution processes in university settings, while Dewah and Sibanda (2022) highlighted improvements in collaborative knowledge-sharing practices among academics.

Communication tools such as WhatsApp and Microsoft Teams were also found to promote real-time interaction and participatory knowledge exchange within academic communities (Mwombeki, Shidende, & Mselle, 2023). Collectively, these findings indicate that communication technologies reinforce knowledge exchange mechanisms within higher education systems. Additional studies such as Mosha, 2025; Namayala, Kondo,& Mselle, 2024; & Vega et al., , 2023 further demonstrate that ICT tools expand access to information, foster inclusive learning environments, stimulate innovation, and strengthen overall KM practices in HEIs.

Table 2: Barriers to Effective Information and Communication Technology (ICT) Use

Barriers to ICT Use	Impact on Knowledge Management	Key References
Limited ICT access for marginalized groups (e.g., rural, economically disadvantaged students)	Reduces participation in knowledge-sharing processes and access to technological resources	Mosha (2025); Omona (2010)
Infrastructure gaps and affordability issues in public and private HEIs	Hinders equitable use of ICT tools, limiting overall KM effectiveness	Fussy (2025); Qazi et al. (2024)
Socio-economic disparities and geographical location affecting ICT use	Uneven distribution of digital infrastructure and skills, compromising KM benefits	Ayiro, Muriithi, and Munyao (2023); Nawaz (2020)
Lack of inclusive ICT policies and investment	Necessitates targeted strategies to improve infrastructure, affordability, and digital literacy	Namayala, Kondo, and Mselle (2024); Shao et al. (2023)

Addressing Objective 2, the analysis identified significant barriers affecting ICT use and KM effectiveness within HEIs. As summarized in Table 2, a major concern relates to disparities in ICT access across different demographic groups.

Mosha (2025) highlighted that marginalized populations, particularly students from rural or economically disadvantaged backgrounds, face limited access to technological resources, reducing their ability to participate effectively in knowledge-sharing processes. Similar concerns were earlier raised by Omona (2010), who observed that infrastructural constraints significantly limit ICT-supported KM initiatives in African higher education contexts. Comparable findings by Fussy (2025) demonstrated that infrastructure gaps and affordability challenges persist in Tanzanian public and private HEIs, hindering equitable ICT utilization. These findings align with Qazi, Sharif, and Akhlaq (2024), who identified financial constraints and technological readiness as critical barriers to ICT adoption in HEIs within emerging economies.

Socio-economic status and geographical location further influence the ability to use ICT effectively. Ayiro, Muriithi, and Munyao (2023) emphasized the uneven distribution of digital infrastructure and skills across East African universities, while Nawaz (2020) observed that institutional disparities and limited strategic planning constrain effective KM practices. Collectively, these studies indicate that digital divides undermine inclusive participation and reduce the overall effectiveness of KM initiatives.

The reviewed literature consistently underscores the need for targeted policy interventions and sustained investment to address these inequalities. Namayala, Kondo, and Mselle (2024) call for inclusive ICT implementation strategies prioritizing infrastructure development, affordability, and digital literacy training. Similarly, Shao et al. (2023) emphasize that sustainable digital transformation requires coordinated institutional support and long-term investment frameworks.

Table 3: Environmental and Organisational Support Factors

Support Factors and Role in Knowledge Management	Key References
Adequate resources, infrastructure, continuous training, and efficient admin processes create a supportive environment for ICT-enabled knowledge sharing, transparency, and decision-making.	Fussy (2025); Mosha and Ngulube (2025); Mosha (2025); Mtebe (2020); Nanjundeswaraswamy and Swamy (2022)
Active stakeholder engagement and inclusive participation increase ICT acceptance and effective KM practices.	Namayala et al. (2024); Ayiro et al. (2023); Na et al. (2022)

Cultural attitudes influence ICT engagement; culturally sensitive strategies improve adoption and KM effectiveness.	Mwombeki et al. (2023); Silva and Mendes (2022); Mkoma and Mgaya (2022); Mwangi and Kimani (2024); Alghail et al. (2023)
Institutional culture fostering innovation and openness enhances stakeholder willingness to use ICT effectively.	Fussy (2025); Mosha et al. (2025); Nagaraja and Davidson (2024)
Broader societal attitudes and community outreach improve ICT acceptance and KM outcomes.	Ayiro et al. (2023); Omanyo and Ndiege (2025)

Regarding Objective 3, institutional and organisational support emerged as pivotal in shaping stakeholder perceptions of ICT effectiveness in KM within HEIs. As summarized in Table 3, stakeholders emphasized that the provision of adequate resources, reliable infrastructure, and continuous training programs is essential for promoting effective ICT use (Fussy, 2025; Mosha & Ngulube, 2025; Nanjundeswaraswamy & Swamy, 2022). Institutions that invest in these support structures create environments conducive to knowledge sharing, collaboration, and innovation.

The reviewed literature further underscores those efficient administrative processes, when facilitated by ICT tools, improve organizational transparency and decision-making (Mosha, 2025; Mtebe, 2020). Moreover, active stakeholder engagement in ICT-related decision-making such as involving faculty, students, and administrative staff in technology planning and implementation is associated with higher levels of acceptance and more positive attitudes toward ICT use (Ayiro et al., 2023; Na et al., 2022; Namayala et al., 2024). Collectively, these findings demonstrate that supportive organisational environments and inclusive participation are critical for optimising ICT-enabled KM.

Cultural influences were also identified as central in shaping stakeholder perceptions and practices. Mwombeki, Shidende, and Mselle (2023) and Silva and Mendes (2022) reveal that cultural attitudes toward technology significantly affect how individuals engage with ICT tools for knowledge sharing. Similarly, Alghail, Abbas, and Yao (2023) highlight that institutional norms and approaches to knowledge protection influence acceptance of ICT-driven knowledge processes. Institutions that overlook cultural dynamics may encounter resistance to adoption, thereby limiting KM effectiveness.

Adopting culturally sensitive strategies is therefore crucial when implementing ICT in HEIs. Understanding local values, attitudes toward technology, and knowledge-sharing norms enables institutions to tailor ICT initiatives to diverse stakeholder groups (Mkoma & Mgaya, 2022; Mwangi & Kimani, 2024). Furthermore, cultivating an institutional culture that encourages innovation, experimentation, and open dialogue enhances willingness to adopt and effectively utilise ICT tools for KM (Fussy, 2025; Mosha et al., 2025; Nagaraja and Davidson, 2024).

Beyond the institutional level, broader societal attitudes toward technology also shape stakeholder engagement. Public awareness initiatives and community outreach can improve ICT acceptance and KM outcomes within HEIs (Ayiro et al., 2023; Omanyo & Ndiege, 2025). Overall, the literature indicates that organisational, cultural, and societal factors operate synergistically in determining the success of ICT-supported KM in Tanzanian higher education.

Table 4: Human Resource-Related Factors Influencing ICT Use

Human Resource Factors and Their Role in ICT-Enabled Knowledge Management	**Key References**
Prior experience with ICT influences confidence and willingness to adopt new technologies; positive experiences foster innovation and acceptance, while negative one's cause resistance.	Fussy (2025); Mosha (2025); Ayiro, Muriithi, and Munyao (2023); Na et al. (2022)
Targeted, continuous professional development and training improve digital literacy, technical skills, and reduce psychological barriers to ICT use.	Namayala, Kondo, and Mselle (2024); Lubuva, Ndibalema, and Mbwambo (2024); Alshehri and Cumming (2020)
Inclusive engagement of stakeholders in ICT discussions promotes understanding, acceptance, and responsive interventions for enhancing ICT capacity.	Mwombeki, Shidende, and Mselle (2023); Adhikari and Shrestha (2023)
Strengthening human resource capacity through ongoing, context-sensitive training is critical for effective ICT-supported KM.	Nanjundeswaraswamy and Swamy (2022); Omanyo and Ndiege (2025)

Aligned with Objective 4, the analysis revealed that human resource factors—particularly training, digital literacy, and prior experience with ICT—significantly influence stakeholder perceptions and adoption of ICT-supported KM practices within HEIs. As summarized in Table 4, stakeholders with positive prior experiences demonstrate higher levels of confidence and willingness to engage with new technologies, fostering a culture of innovation and acceptance (Fussy, 2025; Mosha, 2025; Na et al., 2022). In contrast, limited exposure or negative experiences may generate apprehension, resistance to change, and reduced effectiveness in KM processes (Ayiro, Muriithi, & Munyao, 2023).

The literature consistently highlights the importance of targeted and continuous professional development in overcoming these barriers. Institutions that implement structured training programs aligned with stakeholder needs and technological advancements enhance digital literacy and promote more effective ICT use (Alshehri & Cumming, 2020; Lubuva, Ndibalema, & Mbwambo, 2024; Namayala, Kondo, & Mselle, 2024). Such initiatives not only improve technical competencies but also address psychological barriers by building confidence and reducing resistance among faculty, administrators, and students.

Furthermore, inclusive engagement in ICT-related discussions strengthens understanding and encourages broader acceptance of technology for KM purposes (Mwombeki, Shidende, and Mselle, 2023; Adhikari and Shrestha, 2023). Creating structured spaces for feedback and knowledge exchange enables institutions to design responsive interventions that enhance both individual and organisational ICT capacities.

Collectively, these findings indicate that strengthening human resource capacity through sustained, context-sensitive training is fundamental to improving ICT-supported KM effectiveness in Tanzanian HEIs (Nanjundeswaraswamy & Swamy, 2022; Omanyo & Ndiege, 2025).

Distinction between Leading and Supporting Studies

In synthesising the reviewed literature, distinctions were made between studies that contributed directly to the development of core thematic findings and those that provided complementary contextual insights. Studies identified as foundational were characterised by strong methodological rigour, clear alignment with the research objectives, and substantial empirical contribution to understanding ICT-supported KM in higher education. These studies informed the primary thematic structure of the analysis. In contrast, complementary studies offered additional perspectives or contextual elaboration that enriched interpretation but did not independently shape

the core themes. This distinction was applied to enhance analytical clarity rather than imply differences in overall scholarly quality.

Authors' Interpretation and Implications

The findings of this review underscore that while ICT tools and platforms are widely recognized as significant enablers of KM, their effectiveness is highly contingent upon contextual factors such as equitable access, organisational support, cultural sensitivity, and human resource development. The consistent emphasis on stakeholder engagement, institutional resources, and cultural alignment demonstrates that technological solutions alone are insufficient without parallel attention to social and organisational dynamics.

From a theoretical perspective, the findings reinforce and contextualize socio-technical systems theory by illustrating how technological and human elements interact within the specific realities of Tanzanian higher education. The review highlights that successful ICT-supported KM requires deliberate alignment between institutional structures, stakeholder capacities, and technological infrastructures.

Practically, the review suggests that policymakers and higher education leaders should adopt holistic strategies that integrate technological investment with inclusive policies, cultural awareness, and sustained capacity-building initiatives. Addressing digital divides remains essential to ensuring equitable participation and maximizing the benefits of ICT integration.

Overall, this review emphasizes the multifaceted and context-dependent nature of ICT-supported KM and provides a structured framework to guide institutions seeking to enhance knowledge sharing and organisational learning through context-sensitive technology implementation.

Significance of the Review

The significance of this review lies in its synthesis of diverse empirical evidence to provide a comprehensive understanding of how ICT use influences KM effectiveness in HEIs. By illuminating the interaction between technological, organisational, cultural, and human resource factors, the review moves beyond viewing ICT as merely a technical intervention and instead situates it within a broader socio-institutional context.

This review contributes to both theory and practice by offering evidence-based insights that inform more inclusive and context-sensitive ICT integration strategies, particularly within Tanzanian higher education. The findings provide actionable guidance for policymakers, institutional leaders,

and researchers seeking to address persistent KM challenges through deliberate and well-coordinated technology implementation.

Conclusion

The findings of this systematic review illuminate the multifaceted role of ICT in enhancing KM within HEIs. Stakeholders consistently recognised ICT as a transformative tool that fosters effective communication, collaboration, and access to knowledge critical components for academic excellence and institutional effectiveness.

However, the review also identified significant disparities in ICT access across different demographic groups, revealing that unequal access continues to hinder knowledge sharing and collaboration. This underscores the urgent need for HEIs to address accessibility gaps to ensure equitable participation and benefits for all stakeholders.

Beyond access, the review highlights the pivotal role of stakeholder engagement in shaping positive perceptions of ICT effectiveness. When stakeholders are actively involved in technology-related decision-making processes, their acceptance and willingness to adopt ICT tools increase substantially. Furthermore, institutional support in the form of adequate resources, infrastructure, and training significantly enhances satisfaction and the effective use of ICT for KM.

Importantly, this review emphasises that cultural influences, both within institutions and in broader society, can either facilitate or obstruct effective knowledge-sharing practices. Therefore, optimising the integration of ICT in KM requires a comprehensive approach that considers not only technological solutions but also organisational, human, and cultural dynamics.

Recommendations

Based on the findings of this review, several actionable recommendations are proposed to enhance the integration of ICT in KM within HEIs.

Firstly, HEIs should prioritise meaningful stakeholder engagement by actively involving academic staff, students, and administrative personnel in all decisions related to ICT. This involvement can be achieved through regular consultations, participatory workshops, and structured feedback mechanisms. Inclusive approaches of this nature foster a sense of ownership among stakeholders and have been shown to improve perceptions of technology effectiveness.

Secondly, HEIs should implement targeted capacity-building programmes that address the diverse needs of stakeholders, with particular attention given to marginalised groups. These training initiatives should focus on building confidence and competence in the effective use of ICT tools for KM, thereby reducing skill gaps and promoting equitable participation.

Equitable access to ICT resources is another critical priority. HEIs should develop and implement clear strategies to ensure that all demographic groups, regardless of socio-economic background or geographic location, have adequate access to technological resources. Such efforts may include partnerships with community organisations, investments in infrastructure, and the provision of affordable digital devices and internet connectivity.

In addition, fostering a culture of innovation within HEIs is essential. Institutions should encourage experimentation with new technologies and support initiatives that align technological tools with the needs of stakeholders. Establishing reliable mechanisms for gathering continuous feedback from users will further ensure that ICT strategies remain relevant, adaptable, and responsive to the evolving challenges of KM.

Finally, this review highlights the need for future research to explore the long-term impacts of ICT integration on KM outcomes across diverse educational contexts. Such research should examine how organisational, cultural, and human factors interact with technological interventions to influence the effectiveness of KM practices.

By implementing these recommendations, HEIs can significantly enhance the role of ICT in supporting KM, ultimately improving knowledge sharing, institutional performance, and stakeholder satisfaction.

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Experiences of University Students and Lecturers with the Modularisation System at the Midlands State University, Zimbabwe

Spiwe Ncube and Tadios Chisango

Abstract

This study is an exploration of the experiences of university students and lecturers within the modularisation model at Midlands State University, a Zimbabwean state university. Modularisation is an innovative practice that has been implemented for more than a year to date within the tertiary education sector of Zimbabwe. However, as far as the researchers are aware, no study yet has investigated how the system has been experienced by the students and lecturers at Midlands State University. The current study was a descriptive phenomenological study that employed interviews on six lecturers and eight students. Thematic analysis was used to analyse the data. Findings showed that both lecturers and students have encountered more challenges than benefits indicating a need for refinement in conditions such as assessment and feedback, support, engagement, and expectations.

Key words: Modularisation, University, Students, Zimbabwe

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Résumé

Cette étude explore les expériences des étudiants et des enseignants universitaires dans le cadre du modèle de modularisation mis en place à l'Université d'État des Midlands, une université publique zimbabwéenne. La modularisation est une pratique innovante mise en œuvre depuis plus d'un an dans le secteur de l'enseignement supérieur au Zimbabwe. Cependant, à la connaissance des chercheurs, aucune étude n'a encore examiné la manière dont ce système a été vécu par les étudiants et les enseignants de l'Université d'État des Midlands. La présente étude est une étude phénoménologique descriptive qui s'est appuyée sur des entretiens menés auprès de six enseignants et de huit étudiants. Une analyse thématique a été utilisée pour analyser les données. Les résultats ont montré que tant les enseignants que les étudiants ont rencontré plus de difficultés que d'avantages, ce qui indique un besoin d'amélioration dans des domaines tels que l'évaluation et le retour d'information, le soutien, l'engagement et les attentes.

Mots-clés : Modularisation, Université, Étudiants, Zimbabwe.

Introduction

The semester system is the most common in tertiary education globally. The origins of the semester system date back to the medieval age in Europe in the Bologna process, which was aimed at harmonizing and standardizing tertiary education institutions. In the semester system, the academic year was divided into two 16-week sessions (Bostwick, Fischer & Lang, 2022; Malone, 1946), which allowed for an organized and structured approaches to the delivery of modules. The unit of measurement in a semester system that is commonly accepted in academia is the Semester Credit Hour (SCH) (Wellman, 2005). Each credit hour translates to an hour of classroom instruction with two hours of independent studying, typically spread over a 15–16-week course (McMillan & Barber III, 2020).

Studies have found limitations to the semester system in tertiary education in the 21st century (Esgate et al., 1996; Maqsood, 2019; Rummell, 2015; Wlodkowski & Kasworm, 2003; Wlodkowski & Westover, 1999; Zafar & Iqbal, 2008). For instance, Wlodkowski and Westover (1999) compared the outcomes and experiences of students who participated in an intensive program with those who participated in the traditional semester program. Intensive courses, also known as time-compressed or accelerated courses, are rigorous individual studies that aim to achieve maximum learning progress in a short period (Scott, 2003). The researchers found that those in intensive programs led to better retention rates and higher levels of students'

satisfaction. However, they noted challenges with ensuring academic rigour and quality within the intensive program.

The student demographic details have shifted with growth in non-traditional students. To accommodate the demand from non-traditional students, some universities that follow the semester-based system have been offering non-standard length courses during the semester breaks (DeVeney et al., 2015). Yet other universities have begun to offer time-compressed/ accelerated courses (Tinto, 2012) to not only meet the student demand and address enrolment challenges, but also to ensure student success (c.f. Daniel, 2000).

A semester period may range from 14 to 16 weeks long, whereas a time-compressed course may range between 4 and12 weeks. The semester credit hours are usually maintained as those for a standard 16-week course. These time-compressed courses aid in increasing revenue for the universities while also providing the students and staff members with flexibility (Holzweiss et al., 2019; Lutes & Davies, 2018).

The origins of the time-compressed or modular scheduling are accredited to Colorado College and date back to 1955, under the then Colorado University President, Louis Benezet (Brooks, n.d.; Freeman et al., 2020; Hayward, 2023; The Block Plan on Vimeo, n.d.; The Story of the Block Plan: The Podcast - Colorado College, n.d.). It is a unique approach that deviates from the traditional semester system. The Block Plan structure, as it was termed then, was such that students would only take one module at a time during a block with a duration of three and a half weeks. Students would be fully immersed in the module during the block as they engaged in active and experiential learning.

The Modular System

Modularization is a method of delivering courses in a shorter and more concentrated time frames such as up to three modules in two to four weeks, instead of the traditional semester-long format. It has been adopted by many universities around the world for various reasons such as flexibility and choice, effectively responding to the needs of employers, encouraging more efficient use of resources and boosting opportunities for curricula breadth (French, 2015).

In many cases, the modular system is offered in addition to the traditional system. Some universities pursue whole programs exclusively as a modular system, as in, for example Lynn University, Randolph College (USA) (Gilde, 2023), Victoria University (Australia) (Samarawickrema & Cleary, 2021) and Quest University (Canada) (Warren, 2023) . There are considerable

variations of the modular system with different structures. In this context, one rendition of the modular program is the unit of Montana Western Block Plan, during which students take one class at a time for 18 instructional days (three-hour class /day) within three and half weeks (McCall et al., 2020). Another is the Colorado College Block plan, which consists of eight blocks per academic year, with each one also lasting three and half weeks. Students take one course per block, meeting three hours per day, five days a week. Classes are small, interactive, and experiential as they also take advantage of off-campus study opportunities such as internships, study abroad programs, and field trips, among others.

The modular system also has its benefits and shortcomings, depending on a number of different factors. Some of the major benefits of modularisation include coverage of a larger amount of content in a short period of time. One problematic issue is that students undertake an unusually large number of assessments to measure each small credit-bearing unit and need to carefully juggle and manage their summative assessment loads across several concurrent modules (Jessop & Tomas, 2017; Tomas & Jessop, 2019). This can lead to fatigue, frustration, information overload as well as reduced depth and quality of learning.

Modularization at Midlands State University (MSU)

Universities in Zimbabwe had been following the semester-based system with two semesters in a year, where each semester was approximately 16 weeks long. Recently, universities have shifted completely to a modularisation/ modular scheduling for both the conventional and visiting modes of entry. A change from the semester-based system in terms of registration of students is minimal.

Students still register six modules at the beginning of the semester for both modes of entry. Although the contact number of hours for lectures did not change, the semesters were split into two quarters each, where each quarter is four weeks long. In each quarter, students, from both modes of entry, attend classes of three modules. However, the conventional students attend lectures throughout the 4-week block whereas the visiting students attend a 1-week block. Assessments continue to be done during their respective blocks with examinations taking place at the end of each quarter during week 5.

Theoretical Framework

Tinto's (2012) theory of student success influenced and guided the work in this study. Tinto described four conditions for student success: (a) expectations, (b) support, (c) assessment and feedback, and (d) engagement. The theory

emphasizes the importance of clear and consistent expectations stated to students by their lecturers as their behaviours is shaped by their perceptions of what is expected of them. Tinto further argues effective engagement as the most prominent attribute which enables students to interact with their peers and their lecturers socially and academically.

To ensure student success, the intensive structure of the modular system necessitates implementation of Tinto's four conditions. Thus, this framework provides a comprehensive lens through which to explore the experiences of university students and lecturers in a modularization system, which may present both challenges and opportunities for student success. Whereas modularization allows student's deeper engagement and focused learning, its intensity could be a barrier to the support system.

Statement of the Problem

Midlands State University (MSU) implemented the modular system in 2023. However, no study, as far as the researchers are aware, has explored the experiences of students and lecturers with this new system in their learning and teaching. Thus, exploring the university students' and lecturers' attitudes to the modular scheduling format and its perceived benefits and challenges is important. As students and lecturers are key university stakeholders, their experiences are of considerable importance to ensure that the modularisation system meets their needs. Gaining insight into how they are experiencing the modularisation system in the early phase of implementation is crucial as it allows for tailored adjustments to the modularisation system offering practical interventions for improving the models and teaching designs. This study intends to contribute to the existing literature on innovative teaching and learning initiatives, particularly on the still limited but growing literature on modularization system in universities.

Research Questions

The following specific questions of the study led the research process, in conjunction with Tinto's (2012) four conditions for student success: (a) expectations, (b) support, (c) assessment and feedback, and (d) engagement:

1. What are the benefits of the modularization model in learning and teaching as experienced by university students and lecturers?
2. What are the challenges of the modularization model faced by university students and lecturers ?
3. How can the modularization model be improved to enhance the learning and teaching experiences of the university students and lecturers?

Research Methodology

A qualitative approach was employed to explore the experiences of university students and lecturers with the modular system. The approach allows for a deep exploration of the students' and lecturers' experiences, perceptions, and attitudes towards modular scheduling, providing rich and detailed data that can inform future educational practices (Creswell, 2014; Mayoh & Onwuegbuzie, 2015).

The target population for this study comprised university students and lecturers in the Faculty of Social Sciences at Midlands State University, Gweru Campus. It was conducted during a period of online learning, when both the students and the lecturers were mostly absent from campus. The Social Science Faculty Email Group was used to invite potential participants from four departments, i.e., Applied Psychology, Governance and Public Management, Human Resources, and Community Studies which attracted six participants. A survey tool, LimeSurvey, was used to draw six students. Semi-structured interviews were also employed.

Data Presentation

Demographic Profile

Table 1 presents the demographic profile of the student participants, and Table 2, those of the lecturers. Table 1 indicates that the participation of the students was evenly distributed with regards to gender and level of study and while all were conventional students, one was a visiting student. Of the lecturers, all of them were entry level, with two male and two female

Tabel 1: Student Participants Demographics

Pseudo name	Sex	Level of study	Mode of Entry
Tatenda	M	2.2	Conventional
Grace	F	4.2	Conventional
Siya	M	4.1	Conventional
Thanks	F	2.1	Conventional
Tinotenda	M	1.1	Conventional
Thobile	F	1.2	Visiting

Table 2: Lecturer Participants Demographics

Pseudo name	Sex	Occupation
Marbel	F	Lecturer
Cain	M	Lecturer
Isabel	F	Lecturer
Abel	M	Lecturer

Challenges of the Modularisation Model as Experienced by University Students and Lecturers

The student participants shared that they did not consistently find the four conditions of success, i.e. expectations, support, engagement, assessment and feedback, with the introduction of the modularisation system. In general, the students' reports were not consistent with the commonly cited forms of pedagogical practices conducive for modularisation. The students also reported as being overwhelmed with the transition to modularisation. The findings are presented below, in tandem with Tinto's (2012) four conditions of pedagogical success.

Expectations

All students expected the modularised semester to ease their workload and time management which appears to be based on misinformation or lack of information as presented here.

"I once heard those at UZ (the University of Zimbabwe) talking about it...but for them they do one module then write the exam, do one module then write... so I thought it was going to be the same for us...but no we are doing 3 modules...We didn't receive communication from MSU." (Thanks, 2.1)

"Expectations were not communicated through the right channels...we were just told 'okay fine, you are doing 3 modules for a month then write exams...they posted on our portals, but nothing was communicated directly..." (Siya, 4.1)

"We were just given a summary that we are doing 3 modules in 6 weeks then write exams...to facilitate our own learning..." (Grace, 2.2)

Assessment

Tinto (2012) posits assessments as a valuable tool for countering attrition by enhancing engagement, motivation, and academic success. For instance, assignments keep students actively involved in coursework, enhancing engagement, which is a major predictor of dropout rates.

Participants in this study however revealed that they received the same type of assessments as the semester-based mode of teaching. These were described as typically consisting of individual assignments which are usually in the form of essays, in-class tests, group assignments and/or presentations. However, the frequency of the assessments had increased beyond the students' abilities to cope with the entailing workload.

"...typically we are given in-class tests, individual assignments and presentations, ...a lot more presentations this time actually... and before modularisation, most lecturers would have delegated one member to present our work but this time, every member had to say something..." (Tatenda, 4.2)

Some students also expressed frustration as they only received their feedback towards the time of examinations or not at all.

"...aaah some lecturers they just put a mark...then you find it's a fail ...but it's too late because I have to write exams the following week... it was really tricky ...it's difficult because I don't know what I did wrong ...at least some lecturers leave detailed comments...not just a mark ..."(Thobile, 1.2)

For visiting class students, the negative impact of the delayed feedback was exacerbated by the limited time they had for lectures before sitting for examinations.

"...sometimes you get an assignment back and you are shocked by the low mark... then you are worried because you have a few days before exams..." (Tinotenda, 1.1)

"...yes one of my lecturers gave me feedback in all my assignments, presentations and in-classes...and it helped me to correct my mistakes and improve my understanding of the topics...but other lecturers didn't give feedback and it stressed me out because this whole thing of modularisation needs one to have a quick and solid grasp of the concepts ...otherwise you fail your exams..." (Grace, 2.2)

One student expressed frustration due to the lack of feedback:

"...you know...at one point I frequently tried to contact Mr X (Name anonymised) to ask him what I did wrong ...umm....why I got such a low mark or how I was supposed to tackle the question....but I never got hold of him...aargh it's annoying you know... at least give me feedback because ...4 weeks is very short..." (Thanks, 2.1)

The observations above are also consistent with the findings from the interviews with lecturers as they reported challenges with providing adequate feedback. Lecturers also expressed that assessment and feedback varied unsteadily among their classes. They noted that these erratic variations as dependent on the module size and complexity, and also on the restricted time available in modularised system.

"...some of my modules are very large in terms of content required to be covered ...you see previously we had over 5 months to cover a module but now it's just about 4 weeks...and you not only have to prepare teaching and assessment material, but you have to mark...over 90 assignments...there is just no time...so you just mark..." (Cain, lecturer)

"Yeah imagine having to give 6 or so assignments to a class of 100 students and marking and writing comments on each of those...its time consuming and exhausting..." (Isabel, lecturer)

Overall, the data shows that assessment and feedback received by students from their lecturers were neither consistent nor adequate. There were variations within and between lecturers with some lecturers not providing feedback or providing it too late, which the lecturers attributed it to time limitations that came with modularisation.

Engagement

The study also explored students' levels of academic engagements with lecturers as well as their peers in their learning process. Participants stated that they found it difficult to develop relationships or interact with most of their lecturers both inside and outside classroom.

"For me it was difficult to interact with some of my lecturers as they would not come to class as often as they should have...there is also the issue of lecturers skipping classes in the first week...so I don't know who is at fault because they do not communicate with us to say 'I want to come but I can't come because of other commitments or something'..." (Tatenda, 4.2)

"...some teachers don't come to classes...for example there is this one teacher whom I only saw maybe 2 times in the month so I don't really know him..." (Thanks, 2.1)

"...aaah most of them they are not available after class...I tried WhatsApp and emails but no luck...so I interact with them in class only ..." (Tinotenda 1.1)

Further, a marked reduction in the students' participation in university activities such as clubs due to the increased academic pressure was reported:

"It's a lot of pressure,...3 modules in 4 weeks...then we write 3 exams in one week...it's a lot...since the modularization began, I haven't been able to do any extra-curricular activities because I am always so tired ... there is a lot more to do now..."(Grace , 2.2)

The interviews with lecturers indicated that they made efforts to keep students engaged with content rather than nurturing lecturer-student relations due to standing practice and limited time limitations in class.

"...to maintain boundaries we have to keep our distance...some students do not communicate appropriately. They are too informal especially on WhatsApp... but besides that we have very limited time as we are teaching and marking assignments at the same time. Then we have research on the other hand... there's very little time to attend to all students individually" (Marbel, lecturer)

"Some students call you or send messages in the middle of the night despite having communicated your contact hours...I do give academic assistance outside of class as well to those who contact me during my contact hours "(Abel, lecturer)

"I try to create a warm but stern relationship with my students in class... sometimes we laugh at shared stories or jokes but not too much because I don't want them to see me as their equal...[or else] they won't respect you..."(Cain, lecturer)

Overall, the observations indicated that lecturers had very little time to actively engage with students, which left them feeling somewhat alienated. This was exacerbated by the lecturers' tendency to keep their distance to maintain their relationships with students formal and professional. However, as indicated under the subheading of assessment above, students seemed to cover the gap through more robust engagement amongst themselves facilitated by the increased group and presentation assignments.

Support

Student participants expressed their support experiences of the modularised sessions, as one noted here:

"...we had to get help from other departments like the Counselling Department ...some of us failed to cope with the pressure... you would find that in a day, 8am-4:30pm, we have marathon lectures...then assignments ..." (Siya, 4.1).

Another student also expressed her orientation experience:
"I attended orientation at the start of the semester...or quarter which was run by the university for all new students and I got to meet other students and staff. We were told about the various departments that we can get support from ...for example the Counselling Department and the Library..." (Thobile, 1.2)

Benefits of the Modularisation Model as Experienced by University Students and Lecturers

Assessment

Overall, the observations indicated that participants shared their mixed feelings towards changes in assessment methods. Some had positive sentiments and attitudes towards the opportunities as this one:

"...presentations were a lot this time around so everyone had a chance to present on a concept we had learnt... I benefited a lot from this because I am a shy person .... I now learnt to speak in front of people more..." (Siya, 4.1)

Engagement

Although students' experiences of academic engagement were impacted by the inability to connect with their lecturers in a largely negative manner, they however felt that they were more active in their learning due to the modularisation. They reported taking a more participatory and active role in their learning compared to what they used to do during the semester system.

"You know as a student, if you know you are doing 6 modules in 5 or 6 months, you relax and your level of engagement is reduced... now you have 4 weeks to do 3 modules, so you are pushed to be more engaged..." (Siya, 4.1)

"... for me, my level of engagement is higher than before modularisation because I have to make sure I understand the concepts ...topics ...so yeah it's very high now..." (Tatenda, 4.1)

In summary, students and lecturers expressed considerable challenges due to a variety of factors such as the restricted time due to the nature of the modularisation model. Assessment and feedback were both negatively affected as both students and lecturers reported inconsistencies in classroom feedback with variations between lecturers and within lecturer. However, peer engagement was found to have increased as a coping mechanism to the reduced academic support. In essence, students stated that they benefitted from the increased opportunities of participation and active engagement in their learning.

Strategies to Improve the Teaching and Learning in the Context of Modularisation

Students proposed a few strategies to improve the teaching and learning outcomes in the context of the modularisation regimen operating at the Midlands State University. Some called for greater use of infographics in the lecturers' presentations such as drawings, pictures, videos or audios to enhance comprehension, retention, and critical thinking. As one noted:

"We are often given loads of text material which is hard to understand. It could be good if lecturers provided videos, or voice notes, on WhatsApp or Google classroom to aid the understanding of the notes and handouts given in class." (Thobile, 1.2)

Another one pointed:
"Powerpoint presentations given by lecturers are better with more visualisations than being full of notes." (Tinotenda, 1.1)

The students also called for greater use of social media platforms such as WhatsApp and Google Classroom to enhance learning. They pointed out that these platforms were widely used and found them particularly useful during the COVID-19 lockdown periods. Some expressed dismay that they had suddenly been dropped in favour of an all-out modularisation system.

"Lecturers don't like to use WhatsApp, which is a very cheap and otherwise convenient way of communicating with students, even for providing course material. It worked very well during the lockdowns, and can work even better if used properly and professionally under the modularisation system." (Tatenda, 2.2)

"If lecturers fail to attend their lectures for some reason, it would be prudent if they supply the material expeditiously in the form of videos and or lecture notes on Google classroom." (Grace, 4.2)

Importantly, the students also called for lectures to incorporate blended learning in lessons. As one observed:

"Online learning gives students operating under a modularisation system greater access to classroom material whenever it's most convenient for them." (Thanks, 2.1)

As another one noted:
"Blended learning allows students to attend to some of the classroom tasks using online platforms, saving time which is a scarce resource under the ongoing

modularisation system. It can be useful especially for us visiting students." (Thobile, 1.2.)

Discussion

Both lecturers and students experienced challenges with the modularisation model as it was not always possible for them to experience the four conditions conducive for student success, as advanced by Tinto (2012). As they join tertiary institutions, students hold varying beliefs about their abilities to successfully complete their studies, Returning students also maintain certain expectations of the teaching and learning process within the tertiary learning environment, perhaps based on past experiences or from information gathered from various other sources.

Students in the current study expected that their academic burden would be minimized under the modular system due to the reduced number of modules needed to be taken at a time, and also expectations to get feedback on time. When these expectations failed to materialize, they sought academic support from their lecturers, though in vain, owing to their heavy workload.

What is immediately apparent in these observations is the unbearable pressure on both the students and the lecturers, which leave both groups unsatisfied, burnt out and/or disillusioned (Zimmermann, Rösler, Möller & Köller, 2018). For instance, Donnelly and Fitzmaurice (2005) observed that lecturers tend to give out a multiplicity of assessments halfway through modular teaching blocks with consequences of overburdening the students and diminishing their capacity to give proper grading and feedback on time.

The observations suggest that when lecturers feel overwhelmed with both teaching and assessment, they resort to giving group assignments which are delivered in class in the form of oral presentations. This may explain why the students reported an unusually large number of group assignments/oral presentations, for which they were usually given timely feedback, suggesting that group assignments reduce the workload for lecturers. Whereas this may give a reprieve to the lecturers, and enable the full coverage of module material, this may also tend to overburden the students and even reduce the quality of the material delivered in class. However, if there is an advantage to this and similar approaches, it is that they enhance learner autonomy (Nardo, 2017), which saw the students owning their learning more.

It is also important to note that the lecturers maintained other forms of assessments such as essays and in-class tests to which the students reported delayed or offered little feedback. Hennink, Hutter and Bailey (2020) advanced that successful implementation of the modularised type

of instruction goes in tandem with regular assessment and timely provision of feedback on students' performance. The inconsistency and delay of the feedback were a major challenge for students which often led some students feeling stressed and frustrated. Further, the lack of feedback left the students with a sense of confusion in terms of where they stood and the direction of their academic success. And yet, studies show that a lack of feedback to students on their quizzes, tests and assignments was often a reflection of overburdened lecturers, due mostly to unbearably large class sizes (Hernández, 2012).

Bailie (2014) found that students benefit from knowing their lecturers' schedule for feedback in advance. Constructive feedback provided in a timely manner gives students the impetus and capacity to work on required adjustments and seek assistance from their lecturer and /or peers. However, the current study reveals students lacking timely feedback and lecturers lacking adequate time to do so—the two main nagging challenges the modularisation system needs to address. Challenges that maybe faced by students in this pedagogical approach could be mitigated by the right support from lecturers and peers. The current study reported students as not coping with the overwhelming workload pressure and also not receiving adequate support from their lecturers while similarly strenuous demands are placed on the lecturers with this model of teaching as pointed out by Kops (2014) and Mckie (2022), who highlighted how such a curriculum usually tends to be packed and distractingly busy. Thus, this calls for lecturers to adapt their teaching methods accordingly and also secure training to to deal with the different challenges that may come about with modularisation (Brown, 1992; Wlodkowski & Kasworm, 2003).

In this study students also expressed motivation to be actively engaged in their learning process. Some students highlighted the importance of attending all lectures as key to their understanding of the module content as corroborated by a study which found better attendance in block-scheduled modules (Swain, 2016). Participants reported that the intensity of the modular format of learning motivated them to attend each class, although Dixon and O'Gorman (2020) found contrasting results.

This study indicates that social engagement was limited to academic support due to fatigue. And this view is supported by Welsh (2012), who posited that the majority of both students and staff get fatigued due to the intensive teaching.

Despite these challenges, students called for a few strategies that can potentially be employed to reduce the challenges associated with the

modularisation system through, among others, enhanced use of infographics, social media platforms such as WhatsApp and Google Classroom, as well as blended learning. Infographics in education give textual knowledge a visual representation, increase comprehension, sharpen memory, and foster creativity and critical thinking (Naparin & Saad, 2017). With fast and ubiquitous advancements in technology, use of infographics can have a remarkable impact on students' educational life (Kaya-Hamza & Beheshti-Fezile, 2017).

Scholars have lauded blended learning as more favourable than either mere e-learning or face-to-face learning in so far as it can be used to blend the advantages of both the traditional learning approach and ICT supported learning (Ma & Lee, 2021; Tong et al., 2022). In essence, it has the scope for collaborative, constructive and computer-assisted learning, which can counter the effects of the fact-tracked modularisation systems of learning (Dangwal, 2017).

Conclusion

The study presented in this article was a phenomenological study on university students' and lecturers' experiences with the modularisation model through the lens of Tinto's (2012) four conditions of student success. The findings revealed that both students and lecturers had challenging experiences in their learning and teaching, with some limited advantages. Challenges posed include workload management, communication difficulties, and limited interaction. Advantages include enhanced student motivation, behavioural engagement, collaboration and counselling. This study has implications for educators and institutions who intend to pursue and enhance teaching and learning in the modularised model.

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Understanding Egyptian Private University Students' Perception towards ChatGPT using Protection Motivation Theory

Lamiaa Mostafa and Sara Beshir

Abstract

Artificial intelligence applications are increasingly integrated into higher education, transforming how students and teachers use learning technologies. Despite the growing popularity of tools like ChatGPT, little is known about the psychological and behavioral factors influencing students' intention to use such tools. This study aims to understand the factors that affect students' behavior and intention to use ChatGPT from the students' perspective. Protection Motivation Theory (PMT), a behavioral health psychology theory, explains and predicts individual responses to emerging technologies. Many factors affect students' intention to use ChatGPT, such as trust, perceived severity, self-efficacy, ChatGPT accuracy, perceived novelty, and perceived usefulness. Three hundred and eleven students were invited to fill in the questionnaire. The data were analyzed using partial least squares structural equation modeling through SMART PLS 3.0. The main findings showed that behavioral intention is affected by trust, perceived severity, self-efficacy, ChatGPT accuracy, perceived novelty, and perceived usefulness. The paper contributes theoretically and practically by introducing a framework that explains users' intentions to use ChatGPT applications.

Key Words: ChatGPT, AI, Education, Egypt, University, Protection, Motivation, Theory

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Résumé
Les applications d'intelligence artificielle s'intègrent de plus en plus dans l'enseignement supérieur, transformant la manière dont les étudiants et les enseignants utilisent les technologies d'apprentissage. Malgré la popularité croissante d'outils tels que ChatGPT, on sait peu de choses sur les facteurs psychologiques et comportementaux qui influencent l'intention des étudiants d'utiliser ces outils. Cette étude vise à comprendre les facteurs qui influencent le comportement et l'intention des étudiants d'utiliser ChatGPT du point de vue des étudiants. La théorie de la motivation de protection (PMT), une théorie de la psychologie comportementale de la santé, explique et prédit les réponses individuelles aux technologies émergentes. De nombreux facteurs influencent l'intention des étudiants d'utiliser ChatGPT, tels que la confiance, la gravité perçue, l'auto-efficacité, la précision de ChatGPT, la nouveauté perçue et l'utilité perçue. Trois cent onze étudiants ont été invités à remplir le questionnaire. Les données ont été analysées à l'aide d'une modélisation par équations structurelles à moindres carrés partiels via SMART PLS 3.0. Les principaux résultats ont montré que l'intention comportementale est influencée par la confiance, la gravité perçue, l'auto-efficacité, la précision de ChatGPT, la nouveauté perçue et l'utilité perçue. Cet article apporte une contribution théorique et pratique en présentant un cadre qui explique les intentions des utilisateurs d'utiliser les applications ChatGPT.

Mots-clés : ChatGPT, IA, Éducation, Égypte, Université, Protection, Motivation, Théorie.

Introduction

Integrating artificial intelligence, specifically ChatGPT, into educational settings has brought a transformative pedagogical shift. With its natural language processing capabilities, ChatGPT offers opportunities for personalized learning, research support, and enhanced interactions between students and educational tools. However, concerns persist regarding the authenticity of generated content and overreliance on AI-driven solutions. This introduction provides a glimpse into the multifaceted role of ChatGPT in education, setting the stage for an in-depth exploration of its impact through a comprehensive literature review. Artificial Intelligence (AI) is the branch of computer science that focuses on creating machines capable of performing tasks that typically require human intelligence. These tasks encompass various activities such as problem-solving, learning, understanding natural language, recognizing patterns, and decision-making. AI systems are designed to mimic human cognitive abilities, aiming to simulate intelligent behavior, reasoning, and problem-solving processes (Ahmed et al., 2023).

ChatGPT, a breakthrough in AI language models, is a pivotal advancement in natural language processing, exemplifying the power of large-scale neural networks in comprehending and generating human-like text. Developed by OpenAI, ChatGPT can converse, offer responses, and provide information across various domains. Its capabilities extend to educational settings, aiding personalized learning experiences, providing feedback, and assisting students with queries. The implementation of ChatGPT in education has shown promise in improving the teaching-learning process, influencing discussions about leveraging AI for educational enhancement. Moreover, there is a growing interest in utilizing ChatGPT to provide sources and citations, leading to discussions on how to cite AI-generated content in academic work (Ahmed & Sharo, 2023).

The research problem addressed in this study stems from the lack of theoretical and contextual evidence on what drives students' intention to use ChatGPT in higher education. While previous studies have highlighted the general benefits of AI in learning, such as efficiency, accessibility, and scalability, few have examined the motivational, emotional, and cognitive factors influencing students' adoption of such tools. Moreover, most existing research is concentrated in high-income countries, with minimal focus on African or Egyptian institutions where educational needs, digital infrastructure, and cultural perceptions of AI differ considerably. This study is therefore driven by the need to understand the psychological and technological factors that influence students' behavior toward ChatGPT in Egyptian universities. Given the rapid growth of AI-assisted learning and the growing reliance on tools like ChatGPT for assignments, revision, and information access, it is critical to assess not only students' usage but also the underlying motivations and barriers from a localized perspective.

To address this gap, the study employs Protection Motivation Theory (PMT), a behavioral health psychology framework that explains how individuals evaluate threats and coping mechanisms when making decisions. PMT has been successfully applied to contexts involving risk, trust, and efficacy, making it suitable for understanding the adoption of AI tools that may raise concerns about accuracy, ethical use, or content validity. The research specifically investigates how variables such as trust, perceived severity, self-efficacy, ChatGPT accuracy, perceived novelty, and perceived usefulness affect students' behavioral intention to use ChatGPT in academic settings. While ChatGPT is often hailed as a revolutionary tool in education, much of the discourse is anecdotal or speculative, lacking evidence-based insights from actual users in higher education. For example, despite claims that ChatGPT improves student engagement, reduces workload, or fosters creativity, little concrete data exists to substantiate these claims within the

Egyptian context. This study fills that gap by empirically examining student attitudes and the factors that guide their use of ChatGPT, using data collected from 311 university students and analyzed through Partial Least Squares Structural Equation Modeling (PLS-SEM).

The research is guided by the following objectives:

- To examine the factors influencing students' behavioral intention to use ChatGPT in higher education.
- To assess the predictive power of trust, perceived severity, self-efficacy, ChatGPT accuracy, perceived novelty, and perceived usefulness on this intention.
- To develop a theoretical framework based on PMT that explains ChatGPT adoption behavior in a higher education context.

The findings contribute to theory by expanding PMT into the domain of educational technology adoption and to practice by offering a decision-making model that can help educators and policymakers integrate AI tools more effectively and ethically into university curricula. Understanding these motivations is essential for developing informed strategies to ensure responsible, equitable, and meaningful use of AI in education. In the following sections, we will unravel the story of how ChatGPT is revolutionizing the education sector, which can inspire and guide institutions on their path toward the future.

2. Literature Review

2.1 ChatGPT and education

ChatGPT, developed by OpenAI, is an advanced natural language processing model based on the Generative Pre-trained Transformer (GPT) architecture (Pradana et al., 2023). This model has gained significant attention in various domains due to its ability to generate human-like text responses, making it an innovative tool in artificial intelligence. The extensive usage of ChatGPT's, notably ChatGPT, among millions of students and educators has initiated comprehensive debates concerning their integration within the education field (Rueda et al., 2023)

The implementation of ChatGPT has notably impacted educational settings, offering vast potential in diverse learning environments (Rudolph and Jan 2023). Its language generation capabilities support student learning, facilitate personalized instruction, and assist educators in curriculum development. In education, ChatGPT integration has been explored across various levels and subjects. Empirical studies highlight its efficacy in K-12 education, higher education, and professional training (Pradana et al., 2023). Applications include supporting language learning, providing instant feedback, and aiding in content creation (Albadarin et al., 2023).

Educational institutions leverage ChatGPT capabilities to enhance student engagement, improve learning outcomes, and automate administrative tasks (Castro, 2023). However, varying perspectives exist on its full potential and ethical considerations regarding its use in educational settings. Mostafa (2022) tested the Extended Technology acceptance model to understand the users' opinions on using the metaverse in education; the results of 661 responses defined the importance of Perceived usefulness and Perceived ease, Social Influence, Security, Technology Availability, and Trust on users' intention to use metaverse technology in education.

The relationship between ChatGPT and education shows the symbiotic nature of technology and learning. ChatGPT's adaptive and responsive nature complements educational goals, enabling personalized learning experiences and facilitating accessibility (Deng & Yu, 2023). However, concerns regarding privacy, biases, and the need for human supervision in utilizing ChatGPT for educational purposes persist (Eke, 2023). While it presents immense potential, ethical considerations and continuous research are crucial in harnessing ChatGPT's full capabilities without compromising educational integrity.

The studies suggest an optimistic response and excitement among the public regarding implementing ChatGPT in educational settings. However, reservations emphasize the need for prudent integration and thorough evaluation of ethical implications; user interactions involving ChatGPT within educational settings have surfaced various concerns, encompassing integrity, privacy worries, and the potential for manipulation (Tlili et al., 2023). Research has explored the impact of ChatGPT on medical education, scientific research, medical writing, ethical concerns, diagnostic decision-making, and the potential for automation and has received criticisms (Temsah et al., 2023).

Despite its positive aspects, ChatGPT exhibits significant shortcomings. The frequently mentioned drawbacks include challenges in output quality, lack of specificity in tasks, and an inability to address specific types of queries. Other limitations encompass restricted reasoning capabilities, occasional adverse effects on productivity due to excessive dependence, limited comprehension of text-based outputs, absence of contextual understanding, predictable responses, difficulties in recognizing accents and dialects, delayed response times, and internet access for verification purposes. These factors collectively

represent the weaknesses observed in the ChatGPT application within K-12 educational settings (Zhang & Tur, 2023).

Mostafa (2023a) aimed to understand Egyptian parents' opinions on using robot tutors for their children in the primary education stages. One thousand two hundred thirty-nine parents responded to an online survey. The results emphasize the impact of perceived usefulness and social influence on parents' opinions.

According to Zhang and Tur, (2023), the opportunities for ChatGPT are to facilitate personalized learning, differentiated instruction, and learning support for students, aid educators in crafting assessments and learning materials, emphasize the need for clear usage policies, promote critical thinking and reflection, revolutionize traditional teaching methods, supports AI-driven curriculum development, advocates for further research to establish best practices, offers training to educators for effective ChatGPT utilization, provides aid to English as a foreign language (EFL) students, encourages the integration of AI in education, and contributes to the democratization of education. Kolade et al. (2024) conducted a quasi-experimental study comparing the responses of students in Nigeria and the UK to the use of ChatGPT in academic assessment. The researchers used ChatGPT to generate essays based on a typical assessment brief and evaluated the outputs for originality and quality. The findings revealed that ChatGPT could produce high-quality, original essays across distinct accounts, but faced challenges with generating multiple unique outputs from the same account and accurate referencing. These results underscore significant implications for both Nigerian and UK higher education systems, prompting a call to rethink assessment strategies. The authors proposed a new AI-assisted assessment framework that moves beyond knowledge recall to include competence and performance, aligning with the evolving demands of lifelong learning in a digital age.

2.2 Protection Motivation Theory

Protection Motivation Theory (PMT) is a behavioral theory originating in health psychology, primarily designed to understand and predict individuals' responses to health threats. PMT delves into how people evaluate risks and respond to them based on their perceptions of the threat's severity and their belief in their capability to manage it (TheoryHub, 2023). Originating from health behavior studies, PMT has evolved to influence various fields, including education, where it is utilized as a framework to comprehend behavior change and risk management in academic settings (TheoryHub, 2023). In the educational context, PMT contributes to understanding students' reactions to safety, health, or academic threats, thereby guiding the development of interventions or educational strategies to foster constructive behavior changes (Maleki et al., 2023). Critically, PMT was chosen in this study over frameworks like TAM or UTAUT because it allows for risk and trust factors to be modeled explicitly, both of which are central to students' decisions to use ChatGPT in uncertain academic environments. While TAM focuses on perceived ease of use and usefulness, it lacks constructs that explain how students respond to perceived threats such as misinformation, academic dishonesty, or privacy concerns—all of which are integral in the case of generative AI tools.

2.3 PMT's Relevance in Education

The behavioral Understanding of PMT's adaptation to educational settings offers insights into students' responses to various threats encompassing safety, health, or academic challenges (Zijoud et al., 2023). It explores how students perceive and react to these threats, influencing their behavioral changes and decision-making processes (Hinaa et al., 2023). PMT becomes instrumental in shaping interventions and strategies to manage risks effectively within educational realms. It aids in developing educational policies that foster a secure and conducive learning atmosphere (Faghani et al., 2023).

PMT serves as a lens to assess the effectiveness of educational interventions, facilitating an understanding of their impact on students' behavioral changes and preventive actions (Maleki et al., 2023). By comprehending students' reactions and decision-making processes, PMT contributes to creating educational policies to cultivate safer and healthier learning environments (Kimhasawad et al., 2021). PMT's application in education extends beyond theoretical frameworks, influencing real-world strategies and policies. It aids educators and policymakers in understanding, predicting, and effectively addressing challenges students encounter, thus promoting holistic development within academic institutions (Kimhasawad et al., 2021).

Khani Jeihooni et al. (2022) conducted a cross-sectional study to identify predictors of PMT in primary school students. They revealed significant predictors within the PMT framework, shedding light on the efficacy of PMT in understanding and promoting preventive behaviors against skin cancer among young populations.

Maleki (2023) highlighted the importance of recognizing risk factors to overcome fear and adopt appropriate behaviors among students. Their findings supported the effectiveness of PMT in promoting healthy behaviors by addressing perceived vulnerability and response efficacy.

A study examined the impact of educational interventions rooted in PMT on preventive behaviors. Their research aimed to assess the effectiveness of PMT-based interventions in promoting preventive behaviors among participants, contributing to the body of knowledge on health promotion strategies. The study found that using an educational intervention based on the Protection Motivation Theory (PMT) improved preventive behaviors related to respiratory infections. Therefore, applying this theory-based intervention among hospital staff is advisable as a practical approach to reduce such infections.

Sayed et al. (2022) evaluated the impact of a digital self-learned educational intervention on COVID-19 using PMT. Their study aimed to assess the effectiveness of PMT-based interventions delivered through digital platforms in promoting preventive behaviors and knowledge about COVID-19 among participants. The digital educational intervention, grounded in the Protection Motivation Theory (PMT), significantly enhances non-health university students' understanding of COVID-19, their motivation to protect themselves, and their adoption of self-protective behaviors. Consequently, PMT is widely acclaimed as a foundation for educational interventions related to COVID-19 and other similar outbreaks. Existing literature underscores ChatGPT's transformative role in education but also highlights the complexities of its adoption. While some frameworks (e.g., TAM, UTAUT) have been employed in related contexts, they often ignore psychological risk perceptions and trust-based decision-making that are crucial in the case of generative AI. PMT offers a nuanced approach to capture both motivation and apprehension, aligning with the psychological underpinnings of ChatGPT usage in higher education.

Despite emerging work in Africa, there remains a lack of empirical research examining ChatGPT adoption through validated behavioral theories, such as PMT, in the Nigerian higher education context. Most studies either provide descriptive insights or focus on general digital tools. This study bridges this gap by critically evaluating how trust, perceived severity, self-efficacy, perceived usefulness, novelty, and ChatGPT accuracy influence students' behavioral intention to use the tool

Table 1 summarizes previous research and highlights the similarities and differences between it and this study.

Paper	Model	Country	Sample	Findings
Fu et al. (2024)	UTAUT +PMT	Indonesia	445 students and lecturers	The benefits we perceive, such as the value of learning and the enjoyment it brings, really drive people to use ChatGPT. Factors like how effective users feel their responses are and their confidence in their abilities play a big role in shaping their intentions. Additionally, things like educational background and gender can influence how people behave when using it
Strzelecki (2023)	UTAUT	Polish	503 university students	When it comes to higher education students, habits, expectations of performance, and the fun factor are crucial in predicting how likely they are to adopt ChatGPT. The strongest factor influencing their behavior is their intention to use it, closely followed by their personal willingness to innovate.
Yee et al. (2024)	UTAUT	Hongkong	483 under graduate students	Trust is a major player in predicting how likely someone is to use ChatGPT for assessments. However, feelings of moral obligation and perceived risks can act as significant hurdles. Interestingly, perceived risk doesn't seem to affect the relationship between trust and the intention to use.
Menon and Shilpa (2023)	UTAUT +PMT	India	Interviewed 32 ChatGPT users	Factors from the UTAUT model, along with perceived interactivity and privacy concerns, have a notable impact on how people accept and use ChatGPT. Age and experience can also change how these factors play out.

Shahsavar and Choudhury (2023)	UTAUT	USA	476 chatgpt user	When users have high expectations for performance and view the risks and rewards positively, it greatly influences their decision-making and intention to use ChatGPT for self-diagnosis.
Ma and Huo (2023)	UTAUT	China	160 webchat users	Social influences, the novelty of the tool, and its human-like qualities enhance performance expectations. On the flip side, the fun factor, novelty, and human touch can negatively affect how much effort users expect to put in, ultimately shaping their attitudes toward accepting ChatGPT.
Panggabean et al., 2025	UTAUT + PMT	Taiwan and Indonesia	402 Chatgpt users	This study reveals that the perceived severity of the threat posed by ChatGPT can lower the intention to use it. On the other hand, factors like self-efficacy, response efficacy, performance expectations, and task efficiency significantly enhance both the intention to use and the actual use of ChatGPT in educational settings. The fsQCA method identifies three distinct configurations for both using and not using ChatGPT.
(Zijoud et al., 2023)	PMT	Iran	90 staff from medical laboratories	PMT effectively explains student behavioral responses to academic challenges. Emphasizes perceived severity and efficacy as core drivers.
(Hinaa et al., 2023)	PMT, TPB	University Employees	Malaysia	findings confirm the significant contribution of institutional governance in motivating protection behavior among employees of HEIs

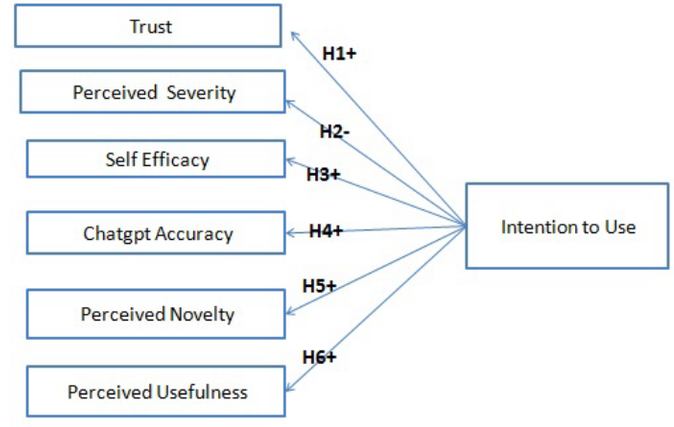
(Faghani et al., 2023)	PMT	384 Agricultural Student	Iran	The study found that students' green behavior is mainly influenced by their green intention, which acts as a key mediator between psychological factors and actual behavior. Strengthening green intention is essential for encouraging environmentally friendly actions.
(Maleki et al., 2023)	PMT	104 males	Iran	The findings suggest that **PMT-based education can effectively enhance adolescents' protective behaviors against skin cancer in the short term.**
(Kimhasawad et al., 2021)	PMT	102 Caregiver Child	Paris	The findings suggest that **PMT-based programs are more effective** than standard methods in promoting early oral health care behaviors among caregivers.
Khani Jeihooni et al. (2022)	PMT	400 primary school students in rural areas of Fasa	Iran	the experimental group showed significant improvements in all PMT constructs (e.g., perceived severity, self-efficacy, response efficacy) and in actual protective behaviors. PMT constructs were able to predict 58.6% of the variance in skin cancer prevention behaviors, demonstrating the effectiveness of PMT-based education in influencing long-term protective behaviors in children

Sayed et al. (2022)	PMT	240 children aged 3–7 years	Iran	The findings revealed that PMT constructs explained 41% of the variance in protective behaviors, with perceived reward and self-efficacy being the most influential predictors. All PMT components were significantly correlated with protective behaviors, indicating that PMT is an effective framework for designing educational interventions to improve COVID-19 prevention among high-risk children with CHD.
Our article	PMT	311	Egyptian university students	This study aims to understand the factors that affect students' behavior and intention to use ChatGPT from the students' perspective. Protection Motivation Theory (PMT) is a behavioral health psychology theory that aims to understand and predict individuals' responses. Many factors affect the intention of students to behave, such as trust, perceived severity, self-efficacy, ChatGPT accuracy, perceived novelty, and perceived usefulness

3. Research Methodology

3.1 Hypothesis Formulation

Figure 1: Reasearch Modle For the Independent variables:



Trust:
Trust is defined as the extent to which users in education believe that ChatGPT is secure and does not share private information (Wong & Lai, 2022). ChatGPT must handle the information of users (Zhang et al., 2022).

Hypothesis 1 (H1): Trust can significantly affect Behavioral Intention

Perceived Severity:

Severity refers to assessing risk occurrence, and high perceptions of severity will promote risk prevention behaviors. PMT defines severity as the level of harm to individuals and vulnerability as the possibility of harm to individuals (Rogers, 1975).

Based on previous researchers, Severity shows the extent to which individuals consider the seriousness of using ChatGPT as a threat (Lin et al., 2023; Floyd et al., 2000; Ruan et al., 2020).

Hypothesis 2 (H2): Perceived Severity can significantly affect behavioral intention

Self-Efficacy:

Self-efficacy (SE) refers to understanding the user's capacity to organize and guide the action required to tackle certain situations in the future (Wood Bandura, 1989). According to previous researchers, self-efficacy affects user behavior (Al-Emran et al., 2023).

Hypothesis 3 (H3): Self-Efficacy can significantly affect Behavioral Intention

ChatGPT Accuracy:

Universities use different AI applications in education, providing an accuracy level in the learning management system (Khan & Jawaid, 2020; Sa'di et al., 2021).

AI applications can be used for education accuracy (Tereseviciene et al., 2020). Instructors must focus on the accuracy of exams (Palloff & Pratt, 2008). Ćwil (2019) insisted that universities provide suitable conditions for lecturers to conduct efficient AI applications. Mun and Hwang (2024) investigated how users' intentions to stick with ChatGPT are ultimately impacted by their perceptions of the usefulness of the information and their level of trust in the information source, as well as how much these perceptions are predicted by the five essential characteristics of information quality: accuracy, richness, timeliness, format, and relevance. Structural equation modeling was used to analyze data gathered from ChatGPT users. The results showed that trust in ChatGPT as a source and the perceived usefulness of the information were significantly positively correlated with each of the five information quality attributes.

Hypothesis 4 (H4): ChatGPT Accuracy can significantly affect Behavioral Intention

Perceived Novelty:

Students' adoption of AI's applications in the higher education context. The novelty of the ChatGPT design can be a crucial factor motivating the acceptance of interactive technologies such as ChatGPT s (Mugge &Dahl, 2013; Polyportis & Pahos, 2024).

Hypothesis 5 (H5): Perceived Novelty can significantly affect Behavioral Intention.

Perceived Usefulness:

Perceived usefulness is defined as "the individual's subjective perception of and belief in the efficacy of implementing specific information technologies or work processes" (Khani Jeihooni et al., 2022; Mostafa, 2023b, p. 124)
Hypothesis 6 (H6): Perceived Usefulness can significantly affect Behavioural Intention
For the dependent variable:

Behavioral Intention:

Educational institutions usually try to understand user behavior by using new applications like AI (Mostafa, 2022). It is essential to understand the factors that affect a user's decision to use a new application (Maleki et al., 2023; Lin,2023; Mostafa, 2023a; Mostafa, 2023b; Ruan et al., 2020). Table 2 represents a summary of the selected variables extracted from previous research.

Table 2: Summary of Literature Review

Paper	Trust (TR)	Perceived severity (PS)	Self-efficacy	ChatGPT accuracy	Perceived novelty	Perceived usefulness	Behavioral Intension
Zhao et al., 2018	x	x					
Singh, et al., 2022		x	x	x	x	x	x
Khani Jeihooni et al. (2022)		x	x				
Maleki (2023)			x				
Rakhshani et al. (2024)		x	x				
Sayed et al. (2022)		x	x				
Lin et al, 2023	x	x	x				

Polyportis and Pahos (2024)	x			x	x		
Mostafa, 2023b						x	

3.2 Data collection

A questionnaire was conducted involving 311 Egyptian students. The survey involves six independent variables, one dependent variable, and five demographic variables. Twenty-three questions are placed in the questionnaire, and the Likert-type five-level scales are employed. The options for each question use points 1 to 5 to represent "extremely disagree," "disagree," "neutral," "agree," and "extremely agree," respectively. Results are measured using two statistical software: SPSS 25.0 and AMOS 23.0. Descriptive analysis and a reliability test were conducted. SEM was established, and the confirmatory factor analysis and hypothesis verification were conducted.

Human subjects were interviewed for this study, and all procedures were carried out in compliance with the Helsinki Declaration (La Vaque & Rossiter, 2001) and its subsequent amendments, as well as the institutional and/or national research committee's ethical standards. Participants were fully informed about the study's purpose, the voluntary nature of their participation, and their right to withdraw at any time without incurring penalties before the interviews. All participants provided written informed consent. Any identifying information was eliminated from the data during analysis and reporting, and confidentiality and anonymity were guaranteed.

In addition to gathering five items of demographic data, the questionnaire used in this study was thoughtfully designed to measure six independent variables and one dependent variable. There were 23 items in all, all of which were designed to support the goals of the study and were supported by pertinent research to guarantee content validity. To capture the intensity of participants' attitudes and perceptions, a five-point Likert scale from "extremely disagree" (1) to "extremely agree" (5) was used. This produced nuanced data that could be statistically analyzed. 311 Egyptian students provided the data, guaranteeing a sizable sample size for the use of sophisticated statistical methods. Strong data analysis was made possible using AMOS 23.0 and SPSS 25.0. First, reliability tests and descriptive statistics were conducted to evaluate the consistency.

Appendix A represents the questionnaire, and Table 3 represents the questions mapped to the research variable and its items.

Table 3: Questions and Variable Items

Latent Variable	Item	Question
Trust	TR1	I believe that ChatGPT is competent and effective in handling my assignments and projects.
	TR2	I believe ChatGPT is trustworthy.
		I believe that ChatGPT provokes my private data
Perceived severity	PS1	I feel secure when using ChatGPT.
	PS2	I feel ChatGPT is secure when making my assignments and projects
	PS3	I feel secure providing personal information when using ChatGPT.
Self-Efficacy	SF1	I can use ChatGPT without any help from others
	SF2	I can use ChatGPT without much effort.'
ChatGPT Accuracy	CA1	Services offered by ChatGPT are secure
	CA2	ChatGPT provides accurate data.
Perceived Novelty	PN1	ChatGPT is different from the other devices
	PN2	ChatGPT is unique.
Perceived Usefulness	PU1	I find ChatGPT very useful in my daily life.
	PU2	'Using ChatGPT helps me to complete my tasks efficiently.'
Behavioral Intension	BI1	Given the opportunity, I will use ChatGPT
	BI2	I am willing to continuously use ChatGPT in the near future.
	BI3	I am open to using ChatGPT as my mainly method to manage education.
	BI4	I intend to continuously use ChatGPT in the future.

4. Discussion of Results

4.1 Descriptive Statistics

A survey was created using an online questionnaire. Three hundred and eleven participants were invited by email and Facebook Messenger to participate in this survey. Data collection lasted for 30 days. Of the 330 responses received, 311 were considered valid for further analysis after verifying the incomplete questionnaire and data. Detailed descriptive statistics of respondents' characteristics are shown in Table 4.

Table 4: Respondents' Profile

Attribute	Category	Frequency	Percent
Gender	Male	158	50.8%
	Female	154	49.5%
Major	Accounting	103	33.1%
	Accounting Information System	35	11.2%
	Finance	40	12.8%
	Human Resources	15	4.8%
	Industrial Engineering	3	0.9%
	Marketing	81	26.0%
	Pharmacy	39	12.5%
Academic Year	First	19	6.1%
	Second	7	2.2%
	Third	274	88.1%
	Fourth	14	4.5%
Governorate Residency	Al-Gharbiah	5	1.6%
	Alex	253	81.3%
	Assuit	6	1.9%
	Cairo	18	5.7%
	Eldakhlea	6	1.9%
	Elbehera	5	1.6%
	Fayoum	9	2.8%
	Giza	8	2.5%
	Kafrelshikh	1	0.3%
	Mansoura	2	0.6%
	New Valley	2	0.6%
	Portsaied	2	0.6%
Age	16-18	8	2.5%
	19	14	4.5%
	20	145	46.6%
	21-28	147	467.2%
Total	**Total**	311	

4.2 Reliability Analysis

Twenty-three items relevant to seven constructs of the proposed research model were selected from previous literature and enhanced based on the specific topic of this study. Cronbach's alpha coefficient was used to determine the reliability of the questionnaire. It examines how closely related a set of items are as a group (Sekaran, 2003). Cronbach's alpha coefficient is equal to or greater than 0.7, similar to construct constraints based on (Kannan and Tan,2015) proved previously. All items in the survey were measured using a five-point Likert scale ranging from (1) strongly agree to (5) strongly disagree, as shown in Table 5.

Table 5: Respondents' Profile

Construct	Cronbach's alpha	Items
Trust (TR)	0.87	2
Perceived severity (PS)	0.82	3
Self-efficacy	0.79	2
Chatgpt accuracy	0.89	2
Perceived novelty	0.75	2
Perceived usefulness	0.88	2
BI	0.91	4
Total	-	17

In this study, the reliability of each construct was evaluated using Cronbach's alpha coefficient. All constructs demonstrated Cronbach's alpha values equal to or greater than 0.70, indicating acceptable to good internal consistency. This suggests that the items within each construct were sufficiently correlated and reliably measured the same underlying concept. According to standard guidelines, a Cronbach's alpha of 0.70 or above is considered acceptable for social science research, confirming that the scales used in this study were reliable and suitable for further analysis.

4.3 Discriminant Validity (DV)

On the other hand, the recommendations of Fornell & Larker (1981) were followed to ensure the discriminant validity of the constructs. The analysis indicated that all constructs possessed a high discriminant validity, where the findings showed that the square root of AVE of each construct is higher than the correlations between the construct and all other constructs. Table 6 shows the results of the discriminant validity assessment.

Table 6: Discriminant validity assessment

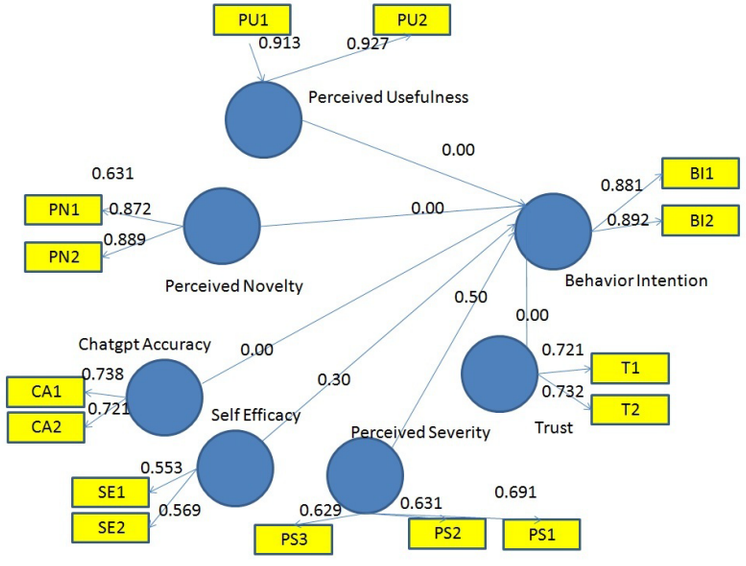
Item	TR	PS	SE	CA	PN	PU	BI
TR	**0.852**						
PS	0.501	**0.813**					
SE	0.752	0.881	**0.732**				
CA	0.256	0.501	0.321	**0.950**			

PN	0.458	0.586	0.341	0.271	**0.863**		
PU	0.581	0.758	0.815	0.458	0.256	**0.789**	
BI	0.501	0.881	0.682	0.229	0.457	0.427	**0.881**

4.4 Hypothesis Results

Trust represented in H1 was supported since our findings confirmed the significant relationship between trust and behavior intention. These findings agreed with the results of (Zhao and Bacao, 2021), which empirically proved the importance of trust in using applications, as results approved by (Polyportis and Pahos (2024)) that tests using ChatGPT ChatGPT's to be used in higher education.

Figure 3: SmartPLS output of the bootstrapping approach



Perceived severity represented in H2 and Self-efficacy H3 is not supported as it agrees with the results of (Rakhshani et al., 2024), in which severity does not affect student behavior intention to use ChatGPT. Rakhshani et al. (2024) tested the Effect of educational intervention based on protection motivation theory on preventive behaviors. As the results showed, students are unconvinced that ChatGPT's can affect damage experienced when using this application. Students also determined that self-efficacy and taking preventative action when using ChatGPT's will not affect their usage.

ChatGPT accuracy hypothesis H4 is supported by this research and the previous researchers (Polyportis and Pahos, 2024; Singh et al., 2022) in which the results of the ChatGPT accurate level motivate students to use ChatGPT more in their learning process.

Perceived Novelty hypothesis H5 is supported in that the students in the university period are willing to use any new applications and are interested in trying new trends like metaverse and AI. The results agreed with (Polyportis & Pahos, 2024; Singh et al., 2022).

The perceived usefulness hypothesis H6 is supported, and the results were approved by (Singh et al., 2022 and Mostafa, 2023b); university students recognized the importance of ChatGPT's and the benefits of using AI in education.

The results of this study closely mirror what we already know about the Protection Motivation Theory (PMT) and how users behave with new technologies in educational settings. The crucial role of "trust" in shaping behavioral intentions, as shown in H1, aligns with the findings of Zhao and Bacao (2021), who pointed out that trust is a key element in how users engage with applications. This idea is further backed by Polyportis and Pahos (2024), who confirmed that trust plays a significant role in students' acceptance of ChatGPT in higher education. On the flip side, the rejection of H2 and H3, which pertain to perceived severity and self-efficacy, echoes earlier research by Rakhshani et al. (2024), where perceived severity didn't strongly influence behavioral intentions in educational contexts. Just like the students in Rakhshani's study, those in this research didn't see potential risks or their ability to manage those risks as major factors in their decision to use ChatGPT.

Moreover, the support for H4, H5, and H6, which cover ChatGPT's accuracy, perceived novelty, and perceived usefulness, reflects wider trends in how educational technology is being adopted. The findings on accuracy (H4) back up previous studies by Polyportis and Pahos (2024) and Singh et al. (2022), highlighting that when AI tools deliver high-quality results, they boost user trust and engagement. The perceived novelty (H5) was also supported, aligning with the idea that university students are generally open to embracing new technologies, including AI and the metaverse (Singh et al., 2022). Finally, the affirmation of perceived usefulness (H6) reinforces the conclusions of Singh et al. (2022) and Mostafa (2023b), who showed that students see real educational benefits from using AI tools like ChatGPT. Together, these findings emphasize the importance of PMT-based frameworks in shaping educational policies and practices, pointing out

which psychological factors educators and institutions should focus on to promote responsible and effective use of technology.

5. Conclusion and Future Work

Technological developments in Artificial intelligence are affecting many fields. Recent advancements in AI have implications for education as these models can understand and generate human-like text (Adiguzel et al., 2023). AI applications can transform the learning process. However, the usage of AI in education also raises concerns about assessment and evaluation (Mostafa, 2023b). This research focused on understanding university students' perspectives on using ChatGPT. It understood the factors that affect the intention to use ChatGPT.

Unfortunately, many variables affect the learning process other than student performance, including trust, perceived severity, self-efficacy, ChatGPT accuracy, perceived novelty, and perceived usefulness. It was clear that students enjoyed the usage of ChatGPT in the education process.

Universities need to understand the importance of using new technologies in education, like ChatGPT's, but also understand the drawbacks and control their usage by the students. Generation Z depends on applications in their daily activities, so when they find AI applications that will ease the learning process, they will use them heavily in most educational activities. Universities should provide explicit learning outcomes when presenting courses and curriculum designs. The capabilities of AI tools can address curriculum designs. Universities must develop rules and policies to use AI technologies, such as ChatGPT, effectively.

The results of this study carry significant weight for both how institutions operate and the larger landscape of educational policy. On the institutional side, universities need to acknowledge that Generation Z students are increasingly turning to AI tools like ChatGPT for their academic work. It's essential for them to think about how to incorporate these technologies into the learning experience in a thoughtful and ethical way. This means creating clear guidelines and policies regarding the use of AI in assignments, assessments, and research to uphold academic integrity while also tapping into the educational advantages that AI can offer. Additionally, schools should rethink their curricula and course structures to include specific learning outcomes that support AI-assisted learning, ensuring that students not only know how to use these tools effectively but also grasp the underlying concepts. On a wider policy scale, educational authorities ought to encourage the responsible use of AI in education by backing research, offering training for teachers, and setting up national frameworks for AI integration that consider both the benefits and potential pitfalls. The limitations of this study also point to the necessity for more extensive datasets and inclusive research that involves educators and postgraduate students, which can help shape well-rounded policy development.

Two limitations are stated in this study. First, the dataset of the students was limited to 311. More students should be involved in this process. The second limitation is the number of selected variables. Selected variables were limited to trust, perceived severity, self-efficacy, ChatGPT accuracy, novelty, and usefulness. Future studies must focus on including postgraduate students' and teachers' opinions; ChatGPT can also be used in curriculum development.

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Sex Education and Sexual Socialization among Students: Insights from Professional Nurses at a South African University of Technology

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Abstract
The engagement of students in risky sexual behaviours remains a public health concern. These risky sexual behaviours lead to sexually transmitted diseases such as Human Immunodeficiency Virus infection and unintended pregnancies among students. Hence, universities need to implement appropriate programmes to promote sexual health knowledge and safer sex among students. Sex education is a significantly important tool to raise awareness and ensure the safety of sexual practices and the prevention of students' susceptibility to risky sexual behaviours. This study aimed to explore and describe professional nurses' views on risky sexual behaviours among students and promote responsible sexual behaviour among students by advocating for sex education at the University of Technology (pseudonym) in the province of KwaZulu-Natal in South Africa. The study was guided by a qualitative, exploratory, descriptive, and contextual design. The researchers employed a purposive sampling technique and semi-structured interviews to collect data from 11 professional nurses in the Student Affairs Department.

Key words: sex education, sexual behaviour, South Africa, student affairs, university students

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The interview data were analysed using Tesch's method of qualitative analysis. Four broad themes emerged: the vulnerability of students to risky sexual behaviour, personal factors leading to risky sexual behaviour, environment influencing risky sexual behaviours among students and health promotion through sex education and training. The study findings show that risky sexual behaviours among students are a concerning matter as it is growing at an alarming rate. The vulnerability of students to risky sexual behaviour should be taken seriously as it affects their health and wellness. Two factors, namely, personal and environmental factors, have been identified as leading students to engage in risky sexual behaviours. Thus, the promotion of responsible sexual behaviour among students through sex education is important, and the necessary steps should be taken to address issues related to this behaviour.

Résumé
L'adoption de comportements sexuels à risque par les étudiants reste un sujet de préoccupation en matière de santé publique. Ces comportements sexuels à risque entraînent des maladies sexuellement transmissibles, telles que l'infection par le virus de l'immunodéficience humaine, ainsi que des grossesses non désirées chez les étudiants. Par conséquent, les universités doivent mettre en œuvre des programmes appropriés pour promouvoir les connaissances en matière de santé sexuelle et des rapports sexuels protégés parmi les étudiants. L'éducation sexuelle est un outil extrêmement important pour sensibiliser les étudiants, garantir la sécurité des pratiques sexuelles et prévenir leur vulnérabilité face aux comportements sexuels à risque. Cette étude visait à explorer et à décrire les points de vue des infirmières professionnelles sur les comportements sexuels à risque chez les étudiants et à promouvoir un comportement sexuel responsable chez ces derniers en plaidant en faveur de l'éducation sexuelle à l'Université de technologie (pseudonyme) de la province du KwaZulu-Natal en Afrique du Sud. L'étude s'est appuyée sur une méthodologie qualitative, exploratoire, descriptive et contextuelle. Les chercheurs ont utilisé une technique d'échantillonnage raisonné et des entretiens semi-structurés pour recueillir des données auprès de 11 infirmières professionnelles du département des affaires étudiantes. Les données issues des entretiens ont été analysées à l'aide de la méthode d'analyse qualitative de Tesch. Quatre grands thèmes se sont dégagés : la vulnérabilité des étudiants face aux comportements sexuels à risque, les facteurs personnels conduisant à ces comportements, l'environnement influençant les comportements sexuels à risque chez les étudiants et la promotion de la santé par l'éducation sexuelle et la formation. Les résultats de l'étude montrent que les comportements sexuels à risque chez les étudiants constituent un sujet de préoccupation, car ils augmentent à un rythme alarmant. La vulnérabilité des étudiants face aux

comportements sexuels à risque doit être prise au sérieux, car elle affecte leur santé et leur bien-être. Deux types de facteurs, à savoir les facteurs personnels et environnementaux, ont été identifiés comme conduisant les étudiants à adopter des comportements sexuels à risque. Ainsi, la promotion d'un comportement sexuel responsable chez les étudiants par le biais de l'éducation sexuelle est importante, et les mesures nécessaires doivent être prises pour traiter les problèmes liés à ce comportement.

Mots-clés : éducation sexuelle, comportement sexuel, Afrique du Sud, affaires étudiantes, étudiants universitaires

Introduction

Mazibuko, Saruchera, and Okonji (2024) stress that there is a growing concern in South Africa regarding risky sexual behaviour and sexually transmitted infections (STIs) as many sexually active students engage in risky behaviours. This concern is further supported by a report from Higher Health (2024), which revealed that the provision of reproductive health services to students has shown little growth in recent years. The number of services available at universities appears to be insufficient to meet the demand, as it is inadequate to the number of students enrolled. Risky sexual behaviour, defined as having unprotected vaginal, oral, or anal intercourse (Kenku, Maiwada & Ajodo, 2023), increases the chances of an individual contracting sexually transmitted infections (STIs) and experiencing unintended pregnancies (Lungu et al., 2022). According to Mavhandu-Mudzusi and Tesfay-Asgedom (2016), young people, including university students, are at the high risk of acquiring Human Immunodeficiency Virus (HIV) because of their risky sexual practices. It has been emphasized that risky sexual behaviours are common among adolescents and young people (Mignault et al., 2022). The World Health Organization [WHO] (2013) indicated that across the world and especially in Africa, HIV/AIDS related mortality among adolescents has been increasing because of their risky sexual behaviour. Murudi-Manganye, Mashau and Ramathuba (2020) suggested that risky sexual practices include having multiple sexual partners, having unprotected sex and transactional sex which continue to pose risks of STIs, unwanted sex as well increase in termination of pregnancy among students. Sheehy-Skeffington (2020) argues that socioeconomic status significantly shapes individual decision-making processes. Similarly, Armstrong-Carter et al. (2025) emphasize that socioeconomic disadvantage and poverty influence young people's decisions in ways that increase their likelihood of engaging in heightened levels of health-compromising, risk-taking behaviours over time.

Correspondingly, socio-economic vulnerability and poverty have been identified as key contributing factors to risky behaviour among students (Baruwa, 2024). Qoza, van Heerden and Essack (2023) indicate that socio-economic conditions and poverty contribute to female students engaging in transactional sex with older men for material gains. Hence, the promotion of safe sexual activity would contribute to the reduction of sex-related morbidity and mortality that are caused by STIs and unsafe abortions (Tekletsadik et al., 2022). It is common knowledge that reproductive health education is important to prevent risky sexual behaviour and its linked to adverse outcomes regarding pregnancy, HIV/AIDS and other STIs among students (Reis et al., 2011). Therefore, an essential strategy to reduce rates of STIs and unwanted pregnancies is to provide students with sexual and reproductive education (Phillips & Martinez, 2010).

According to Fernández-Fernández and Calvo-González (2022), sexual education continues to be a crucial subject in many countries, and yet most students do not receive comprehensive sex education during their high school years. Hence, universities must prioritize integrating a sex education curriculum into their tertiary student experiences. This assists in promoting positive conversations that will foster a campus community of communication and acceptance (Seaver, 2021).

However, the Centers for Disease Control and Prevention [CDC] (2017) argued that despite investments in comprehensive sex education for young people over the years, dangerous trends are still being observed, which confirms the importance of better sexual health education. The CDC works with the government of South Africa and partners to detect, prevent and control infectious disease outbreaks.

Furthermore, university students are at a critical stage of engaging in risky sexual behaviours, requiring informed knowledge and sex education (Amare, Yeneabat & Amare, 2019). While, Rume, Morhason-Bello and Oladokun (2024) emphasized on the importance of creating awareness of risky sexual behaviour among students regarding reproductive health, there are still risks associated with sexually transmitted diseases, which can often lead to fatalities if left untreated. According to Olshansky et al. (2018), professional nurses are advocates and supporters for student access to reproductive health services that act as preventative measures to eliminate risky sexual behaviours. However, the non-compliance to family planning regimens and repeated requests from youngsters for termination of pregnancies were perceived by nurses as irresponsible behaviours (Jonas et al., 2019). Therefore, health promotion and responsible sexual behaviours through sex education among students is a vital factor contributing to good health and

wellbeing (Mudzana & Mfidi, 2026). Therefore, this study aimed to explore and describe professional nurses' views on risky sexual behaviours among students and promote responsible sexual behaviour among students by advocating for sex education at a University of Technology (UoT) in KwaZulu-Natal (KZN), South Africa.

2. Literature Review: Risky Sexual Behaviour and Higher Education

Sexual behaviours have been studied in the context of sexual practices, sexual relationships, reproductive health, STIs, contraception and sexual behaviour (Chawla & Sarkar, 2019). Ugoji (2014) indicated that risky sexual behaviours have been reported to be increasing at an alarming rate and it puts young adults at a higher risk than other age groups for varying reproductive health problems. Thus, risky sexual behaviours among university students remain a public health issue (Ndagijimana, Biracyaza and Nzayirambaho, 2023). Handebo, Kebede and Morankar (2018) confirmed that risky sexual behaviours are becoming a major issue across the world, especially in Sub-Saharan Africa, where students are vulnerable to engaging in risky sexual behaviours. Evidently, most people begin their sexual relationship during adolescence, and some get into risky life-threatening behaviours, such as unwanted pregnancies, abortions and STIs. Unsafe sex, which often begins at the adolescent stage, will persist as long as there is an opportunity for risky sexual activity (Thepthien & Celyn, 2022). For students, being in a new environment exposes them to different social networks, which potentially leads to the development of new sexual behaviours (Eyeberu et al., 2023).

Khumalo et al. (2020) suggested that some of the factors associated with sexual and reproductive health risks occur because of cultural and traditional practices. The interaction between culture and sexual behaviours is very much contested, as studies show that some cultural norms contribute to certain sexual behaviours (Malinga & Modie-Moroka, 2020). Consequently, Juma et al. (2014) suggested that sexual risk reduction programmes should be undertaken to empower communities to challenge the widely accepted cultural norms that expose young people to risky sexual behaviours.

Furthermore, it has been established that unprotected sexual intercourse and inconsistent use of condoms are the drivers of risky sexual behaviours among university students (Muyemayema, 2021). Ajayi, Ismail and Akpan (2019) reported that consistent condom use is a central tool to prevent STIs and STDs among students. It is emphasized that there is a need to improve sexual education and raise awareness of consistent condom use (Chialepeh & Susuman, 2017).

Therefore, there is a need for targeted interventions, as alcohol use can impair decision-making and increase sexual desire, which may result in a higher likelihood of engaging in risky sexual behaviours (Das, Das, & Roy, 2023). Adal et al. (2024) further report that risky sexual behaviours are more likely to occur when students experience peer pressure, use substances, perceive themselves to be at low risk of HIV infection, watch pornography, and lack adequate basic sexual and reproductive health knowledge. According to Mori et al. (2019), the implications of risky sexual behaviours have contributed to the high rate of mortality and morbidity across the world, especially through HIV/AIDS. Moreover, risky sexual behaviours have a greater probability of unintended pregnancies, induced abortion and STIs or HIV/AIDS (Nigussie et al., 2020). Ngoc Do et al. (2020) advised that sex-related educational programmes focusing on the effects of alcohol use, multiple sex partners and unprotected sex should be developed.

Reducing risky sexual behaviours and related health problems can assist young people in adapting to lifelong attitudes and behaviours that support their health and well-being (Ena, Harissa and Aliyu, 2016). In the study, Mahoto, Mitonga and Likando (2025) identified early sexual debut, inconsistent condom use, and limited awareness of STIs as key issues contributing to students' engagement in risky sexual behaviours. Keto, Tilahun and Mamo (2020) argued that despite the awareness, a considerable number of students practise risky sexual behaviours that predispose them to different sexual and reproductive health problems. Consequently, adequate awareness of reproductive health in young people is important because they are in the early years of fertility and engaging in risky sexual behaviours is more probable (Jahanfar & Pashaei, 2022). According to Badillo-Viloria et al. (2020), university students, usually categorized as young people between the ages of 15 to 24, are a population that is largely characterized by high-risk sexual behaviours and also known to be at high risk of contracting HIV infections.

3. Materials and Methods

The study was conducted using a qualitative, exploratory, descriptive, and contextual design. This approach allowed the researchers to explore professional nurses' views on risky sexual behaviours among students, factors contributing to their risky behaviours, responsible sexual behaviour and advocacy for sex education. The study site, the University of Technology (UoT) in Durban, KZN, South Africa, was chosen because it has been revealed that university students engage in risky sexual behaviours (Muyemayema, 2021). The Human Sciences Research Council (2018) reported the KZN Province as having the highest HIV prevalence in South Africa among people aged between 15-49 years. Despite the interventions in addressing

the HIV epidemic, its incidence remains high, especially among young people (Baisley et al., 2018).

About 16 professional university nurses were approached to participate in the study, but only 11 agreed to do so. These nurses, aged between 26 and 65 years old and working experience ranging from 1 year to over 40 years, were drawn from the Student Affairs Division in the Student Counselling and Health Unit.

To achieve the study objectives, interviews, which lasted between 30 to 40 minutes, were conducted using a semi-structured interview guide, allowing data collection flexibility. The team of researchers developed the interview guide in accordance with the objectives of the study. A digital recording method was used to capture accurate and useful information during the interviews, which were conducted from September to November 2023. Following the transcriptions of the interview recordings, the researchers reread the transcriptions for more familiarity with the data, followed by a rigorous thematic analysis. The themes were then organized in clusters, and similarities, differences and relationships between the responses were considered. The researchers referred the cluster themes to the original statements to validate them.

Trustworthiness

The researchers established rigor and achieved trustworthiness by utilizing the principles of credibility, transferability, dependability, and confirmability for data verification (Lincoln & Guba, 1985). To support the validity of the data, researchers ensured that verbatim quotes were included. After the transcription of the data, verification of transcripts was done to confirm the accuracy of findings and to ensure the quality and completeness of the transcripts. Lastly, to ensure transferability, researchers outlined in detail the procedures of the study. For facilitation of the data analysis process, an audit trail was kept by the researchers.

Ethics consideration

Ethical clearance to conduct the study was obtained from the Institutional Research Ethics Committee (IREC 143/23). All participants signed informed consents prior to participating in the study which they participated without pressure. Their identities remained anonymous and were referred to as Participant 1, Participant 2. All information received from participants was kept confidential.

4. Findings

Following the analysis of the data collected from the participants, the following four themes emerged:

i. Vulnerability of students to risky sexual behaviour;
ii. Personal factors leading to risky sexual behaviour;
iii. Environment influencing risky sexual behaviours; and
iv. Health promotion through sex education and training.

Theme 1: Vulnerability of students to risky sexual behaviour

The study findings indicate that most of the students are vulnerable to risky sexual behaviours as they engage in different sexual activities. Professional nurses confirmed that the issue of risky sexual behaviours among students is considered a public health concern, for its prevalence and growth at an alarming rate. Excerpts from the participants' statements in this regard included the following:

> *"As a professional nurse working with students daily, I have seen how risky sexual behaviour cases are increasing within our university. Numerous students do come to seek treatment if they have a sexually transmitted infection and or sexually transmitted diseases"* (Participant 1, Male, 26-30 years old).

> "*Risky sexual behaviour among students is a troubling issue that we most often deal with. They expose themselves to sexual activities that put their lives at risk, and they forget about the consequences it has on their lives*" (Participant 2, Female, 36-40 years old).

> *"I have witnessed how students are vulnerable to risky sexual behaviours since it is a growing pattern across universities as per the reports we get from Higher Health, and sadly, our university is not spared from this public health issue*" (Participant 3, Female, 51-55 years old).

Substantially, the views of participants show that students are a vulnerable group to risky sexual behaviours as they engage in sexual activities. There is a consensus that this is a public health issue growing at an alarming rate.

Theme 2: Personal factors leading to risky sexual behaviours

Participants outlined personal factors that they perceived to be contributing to risky sexual behaviours among students. This is illustrated in the following statements:

> *"Some students decide for themselves that they would never use a condom whenever they engage in sexual intercourse and some use it*

sometimes but because of inconsistent use of protection they end up being exposed to STDs" (Participant 4, Female, 61-65 years old).

"…. they have multiple sexual partners as they would have sex with one person, then later another one. Students who engage in this kind of act are more likely to get HIV and other STIs" (Participant 5, Female, 36-40 years old).

"*...some students love to live a life that they cannot maintain, and they want to be seen as people who have certain standards, especially among their peers. That is why you find them engaging in risky sexual behaviours because of money and dating older people who would do anything for them in exchange for sexual favours*" (Participant 1, Male, 26-30 years old).

Whilst the above statements highlight the personal factors that contributed to risky sexual behaviours, it was revealed that students who are misinformed about the use of contraceptives are also in a disadvantageous position and thus in danger. Participants stated the following:

"Students do not understand the significance of the use of contraceptives and I always get that feeling whenever I engage with them, that they do not care about using them" (Participant 6, Female, 31-35 years old).

"The use of contraceptives by students is taboo to some of them which is why they are exposed to STIs including unwanted pregnancies which eventually affect their university experience" (Participant 7, Female, 46-50 years old).

Theme 3: Environment influencing risky sexual behaviours among students

The environment plays a critical role in influencing students to engage in risky sexual behaviours. The things that students experience and are exposed to can be associated with decisions that they make about their lives. These views of participants are highlighted below:

"*The background of the students has a role in influencing him or her to engage in risky sexual behaviours. Especially male students are pressured by their peers to not use protection during sexual intercourse – sometimes they are judged as if they are not man enough and they are cowards for using condoms which is one of the most challenging things we still need to address*" (Participant 8, Female, 56-60 years old).

"...if a student associates him/herself with people who do not believe in engaging in protected sex, that is problematic because they do not see a need to condomize or use contraceptives" (Participant 9, Female, 46-50 years old).

"Also, the issues of culture and religion contribute to students engaging in risky sexual behaviours, and they influence their decision-making because these beliefs are instilled in them at a young age. This is why some students do not pay attention to the risks associated with engaging in unsafe sex." (Participant 5, Female, 36-40 years old).

Theme 4: Health Promotion through Sex Education and Training

In addressing issues of risky sexual behaviours among students, participants made various recommendations to promote responsible sexual behaviours. It has been highlighted that health promotion through sex education and training is pivotal in championing challenges related to risky sexual behaviour. Participants stated their recommendations as follows:

"We need to be creative in terms of how we promote responsible sexual behaviours among our students. Edutainment activities aimed at creating awareness of the risks associated with engaging in risky sexual behaviours must be effectively implemented across campuses" (Participant 10, Female, 46-50 years old).

"*...promotion of responsible sexual behaviours is not a once-off thing, but it is a continuous thing that we should always strive to ensure the well-being of students and this can be done through various programmes that we do for them whether in residences or on campus*" (Participant 1, Male, 26-30 years old).

Other participants also raised important views on how health promotion can be done with students through sex education to develop their knowledge on issues of engaging in risky sexual behaviours. This is what the participants had to say:

"Sex education provides the opportunity for students to make informed decisions, especially regarding their sexual choices" (Participant 11, Female, 36-40 years old).

"...the most important thing about sex education is that it creates awareness of the importance of using contraceptives; and students learn about numerous contraceptives to use other than condoms

like Pre-Exposure Prophylaxis (PrEP) and Post-Exposure Prophylaxis (PEP)" (Participant 4, Female, 61-65 years old).

"The problem is that sometimes, as student affairs professionals, we are scared to say things as they are, and we need to tell students the brutal truth about engaging in risky sexual behaviours. The purpose of sex education is to create a sense of responsibility among students" (Participant 2, Female, 36-40 years old).

Participants also revealed that training plays a critical role in sharing appropriate information with students. The findings of this study confirmed the need for peer educators to serve at the forefront in training other students on the impact of engaging in risky sexual behaviours. Participants indicated as follows:

"The promotion of responsible sexual behaviour among university students can also be done through peer education. We need to train and empower students to be part of peer educators so that they can teach their peers about healthy lifestyle" (Participant 8, Female, 56-60 years old).

"Training and development of peer educators plays a pivotal role in disseminating information to their peers so that they can educate others about issues related to risky sexual behaviours" (Participant 1, Male, 26-30 years old).

Discussion

The study aimed to explore and describe professional nurses' views on risky sexual behaviours among students and promote responsible sexual behaviour by advocating for sex education at a UoT in KZN, South Africa. The findings of the study revealed that students are vulnerable since they engage in sexual behaviours and activities that put their lives at risk. It has been found that the majority of university students are sexually active and that risky sexual behaviour is prevalent (Alves, Precioso & Becoña, 2022). This issue is a global challenge and should be taken seriously since it contributes to public health concerns. Further, emerging from the perspectives of participants is that students do not consider the consequences of engaging in risky sexual behaviours, which can have physical and psycho-social harm. This includes the high risk for STIs and HIV, including unplanned pregnancies (Rai et al., 2023).

Personal and environmental factors have been found to lead to risky sexual behaviour among students. The findings show that the challenge of poor,

inconsistent or no condom usage by students has been highlighted as one of the contributing factors to risky sexual behaviours. Consistent condom use can reduce the probability of STIs and STDs. Unprotected sexual intercourse due to inconsistent condom use is an important factor that explains the high HIV infection, STIs, and unplanned pregnancies (Sousa et al., 2023). Inconsistent condom use is defined as occasional use or never using it (Hamidi, Regmi & van Teijlingen, 2023).

Moreover, students having multiple sexual partners, defined as having more than one sexual partner over some time, are also a concern which has been identified as a likely driver of the spread of HIV and other STDs (Simelane et al., 2023). The study also found that some students date older people for money or financial gain. These transactional sexual interactions between older people and young students, noted as a mutually beneficial arrangement, provide financial support, gifts, mentorship or experiences to another person in exchange for companionship, intimacy or various levels of relationship involvement. This has negative consequences on their well-being since it leads them to engage in risky sexual behaviours and poses a significant risk factor for young women with respect to HIV infection. There is a trend that students are increasingly opting to date older people for financial independence (Mutinta, 2014).

Participants also gave insights on students failures in using contraceptives which eventually leads to exposures to STIs and STDs. The study found students as lacking an understanding on the procedures and importance of using contraceptives (Hoss and Blokland, 2018). Peer pressure is indicated as one of the leading contributing factors to risky sexual behaviour among students; and it impacts the decisions that students make about who they date, their sexual relationships, and sex (Kiprono, 2021).

Participants strongly believed that the promotion of responsible sexual behaviour plays a significant role in encouraging students to engage in safe sexual behaviours. The university environment is considered as important in strengthening the state and knowledge of health of students. The establishment of health [healthy] universities is based on a alutogenic approach – namely, health promotion (Ahlstrand et al., 2022). The study findings highlight the need for developing creative and innovative programmes which are specifically designed to create awareness of risky sexual behaviours among students.

Sex education is an effective tool to ensure that students are informed about risky sexual behaviours and should be done to help them gain knowledge on life skills (Safitri and Nurhayati, 2023). Lastly, the findings of the study also

advances that peer educators must be thoroughly trained and developed to educate their peers on risky sexual behaviours. A peer education model is paramount in effecting change in knowledge, behaviour, and attitude in groups comparable in age, education, and status (Sakru et al., 2023).

Conclusion

The study indicates that risky sexual behaviours among students are a public health concern, growing at an alarming rate. The vulnerability of students to risky sexual behaviour should be taken seriously as it affects their health and wellness. Promotion of responsible sexual behaviour among students through sex education is important and the necessary steps should be taken to address it. The findings confirm that health promotion through sex education and training plays a significant role in addressing challenges posed by risky sexual behaviours of students. The university should ensure that its reproductive health programmes are evaluated and strengthened to improve the sexual behaviour of students. Access to contraceptives on campuses and residences should be provided efficiently and consistently and students encouraged to make use of them.

Furthermore, awareness of risky sexual behaviours should be created in collaboration with all stakeholders concerned, with students taking a leading role driving the initiatives. Reviving of peer education and recruitment of students, who are willing to educate their peers about health-related issues, are encouraged. Promoting a healthy sexuality culture is not simply the exclusive domain of parents or educators; but should be a collaborative effort between home and educational institutions. Therefore, policies of the universities should be aligned to current issues faced by students and implemented in conjunction with the Higher Health policies. Whilst education plays a primary role in providing information about sexuality and developing related social skills in tertiary education students, health professionals employed at these institutions should acknowledge and support the critical sex education in the sexual socialization of the student.

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Rural-Origin Students' Perceptions of University Support Services for Psychosocial Adjustment

Stanford Kasai

Abstract

Most South African higher education institutions (HEIs) are located in urban centres, requiring rural-origin students to migrate—often disrupting established social networks and posing complex psychosocial adjustment challenges. This study explored the effectiveness of HEIs support services in aiding such students' transitions. Using a sequential-explanatory mixed methods design, quantitative data were collected from 280 students via an online questionnaire, followed by in-depth interviews with eight self-identified rural-origin students. Descriptive statistics and thematic analysis revealed that rural-origin students encounter distinct barriers, including cultural dissonance, technological challenges, difficulties with social connection and navigation, and academic stress. Institutional support services were frequently viewed as misaligned with students' lived realities, prompting reliance on self-organised peer networks for emotional and academic support. These findings call for more inclusive, context-sensitive support frameworks within South African HEIs. While this study prioritises student perspectives, future research should incorporate institutional viewpoints and larger samples to inform scalable policy interventions that enhance rural students' adjustment, well-being, and academic success.

Key words: university support services, psychosocial adjustment, rural-to-urban student migration, digital literacy, self-organised support, social awareness

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Résumé
La plupart des établissements d'enseignement supérieur sud-africains sont situés dans des centres urbains, ce qui oblige les étudiants issus de milieux ruraux à déménager, ce qui perturbe souvent leurs r

Cette étude a examiné l'efficacité des services d'accompagnement proposés par les établissements d'enseignement supérieur pour faciliter la transition de ces étudiants. À l'aide d'une méthodologie mixte séquentielle et explicative, des données quantitatives ont été recueillies auprès de 280 étudiants via un questionnaire en ligne, suivies d'entretiens approfondis avec huit étudiants s'identifiant comme étant d'origine rurale. Les statistiques descriptives et l'analyse thématique ont révélé que les étudiants d'origine rurale se heurtent à des obstacles distincts, notamment la dissonance culturelle, les défis technologiques, les difficultés de connexion sociale et d'orientation, ainsi que le stress académique. Les services de soutien institutionnels étaient souvent perçus comme inadaptés aux réalités vécues par les étudiants, ce qui les incitait à s'appuyer sur des réseaux de pairs auto-organisés pour obtenir un soutien émotionnel et académique. Ces résultats appellent à la mise en place de cadres de soutien plus inclusifs et adaptés au contexte au sein des établissements d'enseignement supérieur sud-africains. Bien que cette étude donne la priorité au point de vue des étudiants, les recherches futures devraient intégrer les perspectives institutionnelles et des échantillons plus larges afin d'éclairer des interventions politiques à grande échelle visant à améliorer l'adaptation, le bien-être et la réussite académique des étudiants ruraux.

Mots-clés : services de soutien universitaire, adaptation psychosociale, migration des étudiants des zones rurales vers les zones urbaines, culture numérique, soutien auto-organisé, conscience sociale

Introduction and Background

Prior research has revealed that student support services are vital for creating conducive learning environments, enriching student experiences, and fostering academic success (Asaah Junior & Agyiri, 2020; Ciobanu, 2013). With growth in student numbers in higher education institutions (HEIs), drawn from diverse backgrounds, including those from poor and rural areas, well-functioning support services are crucial (Boughey & McKenna, 2021). These services encompass activities by various stakeholders to make learning productive (Kaur, 2016), mechanisms to improve academic endeavours (Shabani & Maboe, 2021), and forms of assistance that remove barriers and promote success (Potter, 1998). Essentially, student support services manage campus stressors, allowing students to focus on their studies.

Student support services are vital, yet rural-origin students face unique academic, psychosocial, and cultural challenges transitioning from high school to HEIs. This is because they often face difficulties accessing effective student support services despite the available equity and inclusion policies (Tadena et al., 2025). While some institutions are situated in rural or peri-urban areas, the majority of universities perceived to offer better academic and professional prospects are located in major urban centers, compelling rural students to leave behind familiar family and community support systems (Alemu, 2018; Kift et al., 2010). Scholars such as Tadena et al. (2025) and Kebu et al. (2023) have underscored that this relocation, though potentially transformative, is accompanied by adjustment difficulties that may hinder students' academic persistence and well-being. In urban university environments, rural-origin students must adapt to institutional structures and unfamiliar social and material realities, such as exposure to consumer culture, digital connectivity, and different social norms. These contrasts can provoke feelings of inadequacy and cultural alienation, complicating efforts to form supportive peer relationships and a coherent student identity.

Despite growing interest in student diversity in higher education, few studies (e.g., Tadena et al., 2025; Walker & Mathebula, 2019) have systematically examined how institutional student support services engage with the unique psychosocial needs of rural-to-urban migrant students. Crucially, this migration is not always a matter of free choice; it is largely shaped by financial constraints, limited programme availability, language policy issues, and deep-rooted structural inequalities (Ramontja, 2022; Selod & Shilpi, 2021; Alemu, 2018). It has been argued that rural-origin students, many of whom are also first-generation students, face a unique constellation of barriers, including limited digital literacy, cultural dissonance, language challenges, and unfamiliarity with available student support services (Gabrielli & Impicciatore, 2022; Lo, 2022). These issues are further intensified for vulnerable groups such as women, increasing their risk of academic failure and dropout (Walker & Mathebula, 2019).

This study addresses this concern by exploring the lived experiences of rural-origin students and the adequacy of HEI support services intended to facilitate their adjustment and success. It uses case data from South Africa to investigate the extent to which rural-origin students access and benefit from university student support services in coping with psychosocial adjustment challenges. In line with this main objective, this study answers the following four questions: (1) To what extent do South African HEIs provide professional support for rural-origin students to cope with psychosocial adjustment challenges? (2) How are the rural-origin students assisted in coping with

psychosocial adjustment challenges? (3) To what extent are student services objectives effectively achieved in assisting rural-origin students to cope with psychosocial adjustment challenges? (4) What are the most pressing psychosocial adjustment challenges faced by rural-origin students?

By centering the lived experiences of these students, the study provides insights into how HEIs can better support an undeserved and often overlooked population. The novelty of this study lies in its focus on the intersection of migration, psychosocial adjustment, and student support services, a nexus that has received limited empirical attention in South African higher education literature. The findings contribute to institutional policy and practice by highlighting gaps in current support mechanisms and proposing contextually grounded recommendations for inclusive student development. Since concepts of migration, psychosocial adjustment, and student support services are contextual, it is prudent to explore the South African context.

Before turning into the South African context, as well as the study's methodology, findings, and conclusions, it is important to clarify how certain key terms are used throughout this paper. The definitions provided here are not intended as exhaustive academic treatments but rather as working descriptions that frame the discussion to follow. Six terms, in particular, have been highlighted; not to suggest they are more important than others, but to offer readers a conceptual anchor for understanding the core issues explored in this study.

Rural-to-urban migration has been defined by Selod and Shilpi (2021) as the movement of individuals from under-resourced rural areas to opportunity-rich urban centres, as a well-established pathway to economic and educational advancement.

Rural-origin student is defined as one who attended and matriculated from a rural school, or from a school located in an area not governed by a local board or municipality (Qiu et al., 2011; Thakur, 2015).

HEI refers to "any institution that provides higher education on a full-time, part-time or distance basis and which is established, deemed to be established or declared as a public HEI, or registered or conditionally registered as a private HEI under the Higher Education Act, 101 of 1997" (Department of Higher Education and Training, 2021: 66).

Student support services are institutional mechanisms that HEIs establish to enhance student welfare and promote academic success (Johnson et al., 2022; Asaah Junior & Agyirii, 2020; Kaur, 2016).

Psychosocial support has been defined by several sources (e.g., Johnson et al., 2022; Othman et al., 2014; Tadena et al., 2025; U.S. Department of Education, 2021) to encompass all activities designed to address the interconnected psychological and social needs of individuals. This involves attending to psychological dimensions such as emotional well-being, cognitive processes, and feelings; and social dimensions such as family dynamics, interpersonal relationships, and cultural integration and belonging.

Perception, in the context of student support services, refers to the cognitive and experiential process by which students understand, engage with, and interpret the purpose and impact of these services (Chan & Hu, 2023; Mansouri, 2020; Schunk & Meece, 1992). This is fundamentally shaped by their individual lived experiences.

Student Support Services and Rural-Urban Disparities in South African HIEs

South Africa's higher education system comprises 26 public and over 21 private universities, predominantly located in urban areas (Kamerpower, 2022; Tjønneland, 2017; Uni24, n.d.). According to Macupe (2019) and Lane (2021), only eight public universities are in rural settings, which are often underdeveloped and lack critical infrastructure. Furthermore, Ntombela and Ntombela (2022) and Lefoka and Tlali (2021) have indicated that universities located in rural areas are also pressured to adopt urbanised academic cultures and norms, which further alienates rural-origin students. This disparity contributes to a structural divide, disadvantaging rural-origin students in accessing and succeeding in higher education (Nkomo & Sehoole, 2007; Ratledge et al., 2020).

Mabizela and Matsiliza (2020) and Mlambo (2018) have underscored that such disparities emanate from the fact that rural regions in South Africa frequently lack basic services such as housing, sanitation, and electricity. Arguably, such limited development catalyses rural-to-urban migration pushing higher level students and skilled individuals to urban centers in search of more resourced training institutions and better employment opportunities, respectively. As such, Walker and Mathebula (2019) keenly noted that urban HEIs become the preferred viable option for rural-origin students seeking quality education and improved life chances.

Against this background characterised by rural-urban disparities, South African HEIs, which are largely urbanised, attract many students. For example, more than 1.2 million students are enrolled in South African HEIs (see Agumba et al., 2023; Statista, 2023; Czerniewicz & Brown, 2014), yet disaggregated data on rural-origin student numbers are lacking. However, some sources have shown that rural-origin students are often economically disadvantaged and face additional structural barriers to access, retention, and academic success (Masolo et al., 2018; Ramontja, 2022). These students' struggles are not simply due to poverty but also to systemic neglect (Chidakwa, 2025), remoteness from critical infrastructure and services (Lasselle & Smith, 2025; Mann & Hordern, 2019), social capital and cultural dissonance within predominantly urban academic environments (Siqoko & Vandeyar, 2024). This is not to say that rural-origin students are necessarily poor, but rather most of them are disadvantaged by limited development in rural areas.

Unlike urban-origin poor students who may still benefit from proximity to infrastructure and public services, Lombo and Subban (2024) and Agumba et al. (2023) have argued that rural-origin students face disadvantages stemming from severely under-resourced schools, poor internet connectivity, limited transportation, and weak career guidance systems. Arguably, even when admitted to HEIs, rural-origin students confront academic challenges, linguistic barriers, and social alienation in environments that are culturally and structurally unfamiliar.

This mismatch leads to lower enrollment and success rates among rural-origin students compared to their urban peers (Czerniewicz & Brown, 2014; Wells et al., 2023). Chidhakwa (2025) and Siqoko and Vandeyar (2024) have asserted that national education strategies often treat disadvantaged students as a homogenous group, overlooking the unique needs of rural-origin students. As such, Walker and Mathebula (2019) suggested the need for tailored policies that identify rural-origin students as a distinct category to bridge these persistent gaps. Further clarifying this need, Ramontja (2022) and Ratledge et al. (2020) underlined that intentional academic integration is key to increase the rural-origin students' likelihood of succeeding in HEIs.

In line with the need for intentional integration strategies, student support services, such as academic advising, counselling, mentoring, and financial aid, are increasingly seen as essential for easing students' transitions from high school to HEIs (Boughey & McKenna, 2021; Ciobanu, 2013). Several sources (e.g., Chidhakwa, 2025; Toyon, 2024; Council on Higher Education, 2020; Walker & Mathebula, 2019) have revealed that most HEIs do not design

these services specifically for rural-origin students, and their effectiveness in addressing this group's unique needs remains under-researched.

Effective student support services can mitigate these transitional adjustment challenges. According to Ali et al. (2021) and the Organisation for Economic Cooperation and Development (OECD, 2018), student services should aim to provide inclusive environments, foster social integration, and enhance academic performance. Johnson et al. (2022) has noted that when implemented effectively, such services contribute to increased student retention, academic achievement, and a greater sense of belonging. However, the effectiveness of student support hinges on institutional commitment, adequate staffing, digital infrastructure, and financial resources. As such, HEIs must prioritise the intentional design of student support services that respond to the lived experiences of rural-origin students (Sakız & Jencius, 2024; Shabani & Maboe, 2021).

The psychological and cultural transition from rural to urbanised HEI life is profound. Intentionally designed psychosocial support has inherent potential to reduce loneliness among rural-origin students, increase their self-confidence, and competitiveness, especially in first year of study (Tadena et al., 2025; Meehan & Howells, 2018; Othman et al., 2014). This creates a sense of belonging, reduces stress of relocation, and reduces vulnerability to mental health issues and academic failure (Kroshus et al., 2021; Yang et al., 2022; Wallin et al., 2019). Furthermore, Othman et al. (2014) underlined that well-structured, inclusive student support services not only help students adjust but also enhance institutional reputations and attract future enrollments. Ensuring these services meet the specific needs of rural-origin students is vital for equitable education and national development.

Core findings from literature are that South Africa's higher education landscape is urban-centric, with HEIs located in rural areas pressured to adopt urban norms, marginalising rural-origin students. These students often face compounded barriers, such as infrastructural deficits, limited digital access, and cultural alienation, which affect their access, retention, and academic success. Despite these challenges, student support services are rarely tailored to address the unique needs of rural-origin students, and disaggregated data on this demographic remains scarce. Existing services focus broadly on disadvantaged students without recognising rural-specific vulnerabilities. While literature affirms that well-designed student support can foster academic integration and mental wellbeing, its targeted impact on rural-origin students is under-researched. This gap signals a pressing need for context-sensitive, inclusive support strategies that directly address rural students' lived realities. To better understand this gap and propose

contextual strategies, this study uses students' lived experiences on the intersection of psychosocial support, student support services, and rural-urban disparities. The next section answers questions on what, where, when, why, who, and how data used to close this gap were gathered and analysed in this study.

Methodology

Both qualitative depth and quantitative breadth were necessary to explore the lived experiences of rural-origin students and assess the adequacy of HEIs' support services. To achieve this, a mixed-methods approach was adopted in a sequential explanatory design. This involved first administering a questionnaire survey to gather broad, quantifiable insights, followed by narrative inquiry to capture in-depth, personal accounts that enriched the understanding of survey findings.

Quantitative data were collected from multiple South African HEIs, representing a range of degree-conferring types, including both traditional public universities and private institutions. A combination of convenience, purposive, and snowball sampling methods was employed. As the researcher is affiliated with a private HEI in South Africa, initial access to participants was conveniently facilitated through existing professional networks. Four institutions were initially targeted, two public and two private, with one located in a peri-urban area and the remaining three in urban settings. The digital questionnaire was distributed via institutional email lists. Sampling was purposive in selecting diverse institutional contexts, and snowballing occurred as initial contacts referred the researcher to additional participants across other HEIs.

As previously noted, approximately 1.2 million students are enrolled in South African HEIs (see Agumba et al., 2023; Czerniewicz & Brown, 2014; Statista, 2023). Based on this population size, Saunders and Thornhill (2009: 219) recommended a sample of 384 respondents to achieve a 5% margin of error for populations between 1 and 10 million. While the study aimed to meet this target, only 280 students responded to the questionnaire survey, yielding a response rate of 73%. Drawing on findings from Wu et al.'s (2022) meta-analysis, which reported average online survey response rates typically ranging up to 44.1%, this study achieved a substantially higher response rate. This increased participation was primarily facilitated by sending targeted reminder emails to participating students, encouraging questionnaire completion.

Respondents completed a structured Google Forms questionnaire comprising closed-ended and Likert-scale questions. The instrument was

designed to capture students' perceptions of access to and the effectiveness of institutional support services, along with indicators of their psychosocial adjustment. To allow for comparative analysis, the questionnaire also included a self-identification item for students to indicate whether they came from a rural or urban background.

Of the 280 survey respondents, 51 students (18%) self-identified as having a rural background. All 51 were invited to participate in follow-up interviews to explore their lived experiences transitioning into higher education. Eight students (16% of those invited), two male and six female, volunteered for in-depth interviews. While Hennink and Kaiser (2022) suggested that saturation in qualitative studies is often achieved with 9 to 17 interviews, the present study did not meet this threshold. This was partly due to two factors; very few students expressed willingness to participate, and two participants who initially expressed willingness to participate later withdrew from the study. Despite these limitations, the eight interviews generated rich insights as the sample size was not far from the acceptable threshold. Given the geographical dispersion of participants, interviews were conducted and recorded in English via Google Meet. A semi-structured interview guide was used to prompt discussion around their personal experiences, challenges faced, and perceptions of how effectively institutional support services addressed their needs. While guided, the format allowed participants to share their stories openly within the thematic scope of the study.

To enhance the quality of both instruments (questionnaire and interview guide), a pilot study was conducted with a purposive sample of 10 students, comprising five of rural origin and five of urban origin. The pilot study aimed to assess the clarity, appropriateness, and robustness of the instruments. Based on participant feedback, minor revisions were made to improve the wording, sequencing, and overall relevance of the instruments in adherence to ethical consideration. For example, all participants gave informed consent via digital consent forms prior to participation. Their confidentiality and anonymity were maintained throughout the research. Ethical clearance was obtained from the relevant institutional ethics committee prior to data collection.

Quantitative data were analysed using SPSS IBM version 30, specifically using descriptive statistics to summarise demographic information and identify trends in students' access to and satisfaction with institutional support services. Likert-scale items were analysed using frequency distributions and visualised through component bar graphs. To assess the reliability of data gathered using the questionnaire, Cronbach's alpha was calculated at 0.871, indicating strong internal consistency. Additional reliability tests were

done using split-half reliability (r = 0.800), Spearman-Brown coefficients for equal and unequal lengths (0.889 and 0.890, respectively), and the Guttman split-half coefficient (0.885). These results collectively confirm the questionnaire's high internal consistency and reliability in measuring the intended constructs.

Qualitative data sourced through interviews were transcribed verbatim using Google Meet and analysed thematically. Thematic analysis was guided by six steps proposed by Braun and Clarke (2013); organising data, immersion in the data, generating codes, generating categories, generating themes, and producing the report. A coding framework, presented in the findings section, shows the relationship between categories and themes related to psychosocial adjustment, access to student support services, and institutional responsiveness. Transcripts were independently reviewed to ensure accuracy and consistency. The use of both quantitative and qualitative methods enabled triangulation, thereby enhancing the study's credibility and depth of insight. The next section presents synthesised findings resulting from the methodology outlined in foregoing paragraphs.

Synthesised findings

This section unfolds by exploring the biographical profile of the participants so that findings can be contextually understood within the scope of these demographics. It also discusses the descriptive outcomes of data gathered using the questionnaire survey. After that, the rest of the chapter discusses the four themes resulting from the analysis of interview data.

Participants' demographic profile

Building on the work of Casteel and Bridier (2021) and Banerjee and Chaudhury (2010), this study recognises the critical role of demographic variables, such as age, gender, education, and income, in providing a comprehensive understanding and characterisation of research samples.

As outlined in the previous section, this study used a sequential-explanatory approach using the questionnaire survey followed by a narrative inquiry. Of the 280 participants who responded to the questionnaire, the majority were female, accounting for 74%, while 25% were male, and 1% did not disclose their gender. This may be partly attributed to South Africa's gender demographics, where females outnumber males (Statistics South Africa, 2011), alongside national education policies that promote gender equity and the empowerment of adolescent girls and young women (United Nations South Africa, 2022). In terms of racial identification, 66% identified as Black African, 27% as Coloured, 2% as Indian/Asian, and 5% as White. This is partly explained by racial distribution in the country constituted by native South Africans outweighing other races (Statistics South Africa, 2024). Then, the age distribution revealed that 68% were between 18 and 21 years old, 23% were in the 22-25 age group, and 9% were above 25 years of age. This indicates that a substantial proportion of the sample were students entering HEIs directly from high school, making them well-positioned to share first-hand experiences of their initial transition into higher education.

Furthermore, 18% and 82% of the respondents were of the rural-origin and urban-origin, respectively. While rural-origin students constituted a smaller proportion of this specific sample, their significance is amplified when considered against the broader South African higher education landscape, which serves approximately 1.2 million students nationally (Matsolo et al., 2018; Statista, 2023; Tjønneland, 2017). Prior research by Tadena et al. (2025) and Walker and Mathebula (2019) has indicated that students with a rural background frequently navigate distinct academic and psychosocial challenges which influence their experience and engagement with institutional support services. As such, they offered valuable insights into the differentiated support needs within higher education.

Academically, the largest group of participants, 43%, were enrolled in their first year of undergraduate degree programmes. Second-year students comprised 21%, and third-year students accounted for 22%. This suggests that a significant portion of respondents were encountering higher education for the first time, placing them in a strong position to provide first-hand insights into their initial transition experiences. Finally, all the eight students who participated in the narrative inquiry had a rural background and they identified as Black Africans. This is partly attributable to the colonial legacy of spatial segregation, which relegated native South Africans to rural areas and townships based on racial classification (Group Areas Act, 1950).

Respondents' experience with support services

To gain deeper insight into students' perceptions of support services, respondents were asked to reflect on their experiences with the available offerings. This inquiry aimed to identify which services were most widely accessed and how students perceived their effectiveness. Understanding these perceptions served as a foundational step toward exploring the lived experiences of students in greater depth. The questionnaire specifically addressed students' satisfaction with institutional support services, their comfort in discussing personal or academic issues with staff, whether they felt emotionally supported, and whether staff showed genuine concern for their academic progress. Figure 1 shows distribution of responses as perceived by respondents.

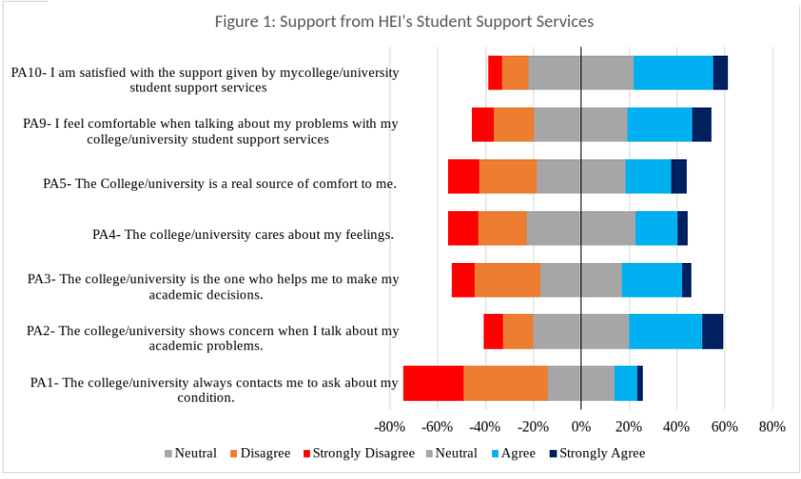


Figure 1 suggests that most of the respondents reported that HEIs do not contact them regarding their psychosocial condition. This is numerically supported by the fact that this construct, coded PA1, had the least mean of 2.28 and standard deviation of 1.017. Despite the concern that most respondents reported that they are not consulted regarding support services they need the most, they were generally satisfied with the support they are given. For example, the construct PA10 recorded the highest mean of 3.23 and standard deviation of 0.93. This highlights the importance of involving students in the design of support services, as respondents reported feeling excluded. It suggests that as much as existing support services are beneficial, they should not be implemented without meaningful consultation with the intended beneficiaries to ensure their relevance and effectiveness.

To explore students' perceptions of academic support from lecturers, respondents were asked to reflect on their personal experiences. The aim was to assess the extent and effectiveness of lecturers' contributions to student learning. This helped gauge the broader academic support landscape within HEIs. Specifically, the questionnaire included items on whether lecturers provided study guidance, offered help to improve academic skills, and were accessible when needed. Figure 2 visually summarises the students' responses to these aspects.

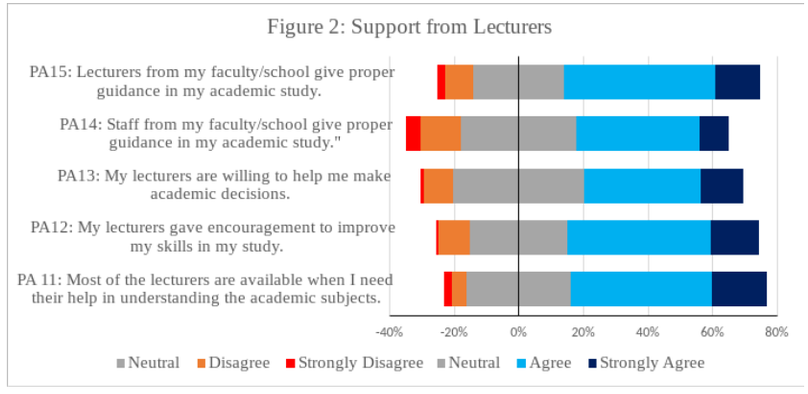
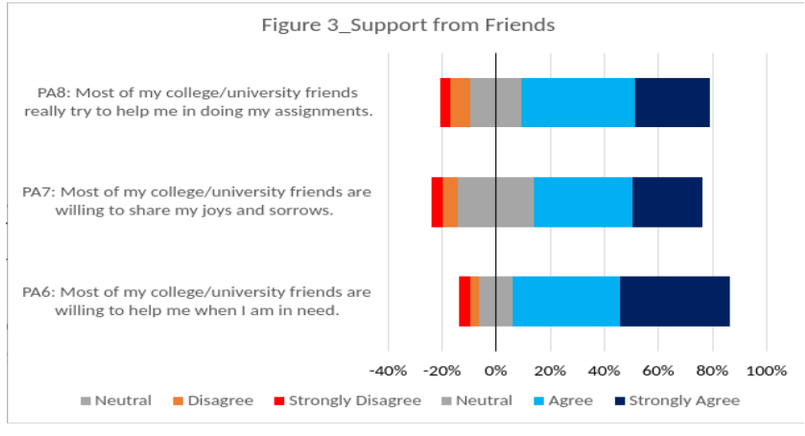


Figure 2 indicates that students are generally satisfied with the academic support received from their lecturers. When compared with the responses in Figure 1, it is evident that students reported higher satisfaction with lecturer support than with institutional student support services. This may be partly attributed to the more frequent and direct interaction students have with lecturers, in contrast to the limited engagement they typically experience with broader institutional support service providers. The mean satisfaction scores for lecturer support ranged from 3.34 to 3.69, with standard deviations below 1 across all items, suggesting consistent positive perceptions. These results imply that academic staff in HEIs tend to adopt inclusive support strategies that benefit students across diverse backgrounds.



Regarding support from peers, a significant percentage of respondents indicated that the support they give each other has helped them adjust comfortably in their academic pursuits. Peer-to-peer support was rated

higher than the assistance offered by institutional student-support services. This is reflected in the data, with mean scores ranging from 3.74 to 4.10 and standard deviations between 1.005 and 1.037, indicating consistent responses clustered around the mean. Overall, the findings suggest that students rely more heavily on academic staff and peers than on institutional service providers. This underscores the need to enhance the visibility and effectiveness of formal student support services to match the impact of other support systems. To further investigate this trend, in-depth interviews with rural-origin students revealed four key themes, as outlined in Table 1.

Table 1: Themes and sub-themes

Themes	***Sub-themes***
Institutional gaps in support for rural-origin students	*Lack of university services*
	Ineffective university services
	Lack of targeted programmes
	Limited tailored programmes
Self-organised support & social awareness	*Self-organised support*
	Digital literacy
	Social awareness programmes
Student perceptions of the role and effectiveness of student support services	*Support effectiveness*
	Effectiveness of objectives
Psychosocial and academic challenges faced by rural-origin students	*Challenges faced by students*
	Improvement in wellbeing
	Impact on wellbeing and academics

Theme 1: Institutional gaps in support for rural-origin students

To explore this theme, participants were asked to reflect on perceived shortcomings in institutional support services, especially in relation to rural-origin students. Their responses highlighted a general lack of targeted, professional support. Many described the services as ineffective, citing reasons such as unapproachable or impatient staff, insufficient resources, and the absence of support programs specifically tailored to their unique

needs and backgrounds. This was established as the following statements of participants in their own words indicate:

> *Interviewee 1: There is nothing except that we as students have organised ourselves into small groups where we met twice a week to discuss the challenges that we were facing and how to focus and manage school work and not feel overwhelmed.*
>
> *Interviewee 4: Not very effective…providers are not patient.*

The sentiments expressed by interviewees 1 and 4 indicated lack of such services; if they exist, there is limited awareness among students regarding specifically tailored programmes for rural-origin students. These sentiments are supported by Walker and Mathebula's (2019) conclusion that there is a widespread absence of specialised programmes or resources designed to cater to the needs of rural-origin students across HEIs. The participants indicated that tailored support could include structured orientation for rural students, digital literacy workshops, peer mentoring by senior rural-origin students, or access to specialised counselling services that address cultural and psychosocial adjustment. This suggests that eligibility could be based on indicators of rural-origin. Valid concerns about feasibility, especially due to limited resources and institutional capacity, may be a limiting factor. However, adding rural-origin student support to existing services could be a practical and inclusive starting point.

Theme 2: Self-organised support and social awareness

As alluded to earlier in theme 1, rural-origin students use *'invented'* channels (self-organised peer groups) to share coping strategies, discuss academic challenges, and manage responsibilities collectively. In their own words, Interviewee 1 confirmed that *"our own initiative of the social gathering helped us to gather and socialise educating each other on the city life".* This suggests that social awareness programmes, initiated and organised by students themselves, have proven beneficial in fostering open dialogues to address challenges and facilitate adjustment to the complexities of urban life. This grassroots initiative has helped fill a critical gap in psychosocial support and demonstrates a high level of student agency and resilience. Such an initiative has been identified by several sources (e.g., Kift et al., 2010; Selod & Shilpi, 2021; Sheng et al., 2025; Skinner & Zimmer-Gembeck, 2007) as key to navigating adversity in higher education environments.

In addition to peer-led support groups, participants suggested adding a digital literacy module to the university curriculum. This would help students from under-resourced schools gain the skills needed to use academic

platforms, complete assignments, and take part in online learning with more confidence.

Theme 3: Student perceptions of the role and effectiveness of student support services

Participants identified what they perceived to be the main objective of student support services. These included helping them cope with psychosocial adjustment challenges, supporting rural-origin students in adapting to city life, and enabling greater focus on academic responsibilities. These perceptions were based on their personal experiences and expectations rather than formal institutional definitions. The findings suggest that while students are aware of some core functions of student support services, their understanding is largely shaped by their immediate needs and challenges. For example, Interviewee 6 noted that existing services are *"not very effective… providers are not patient"*. These sentiments are in sync with sources (e.g., Johnson et al 2022, Ali, et al 2021, U.S. Department of Education 2021, OECD, 2018) that emphasise the importance of providing comprehensive and flexible support to help students overcome the challenges associated with rural-to-urban migration.

Theme 4: Psychosocial and academic challenges faced by rural-origin students

The challenges reported by participants included financial constraints, limited access to resources, and difficulties in adjusting to urban environments. These challenges were perceived to trigger psychosocial issues such as feelings of isolation, cultural disconnection, anxiety around social interaction, homesickness, and academic stress. As one participant, *Interviewee 5,* said:

> *They do affect as the way one ends up stressed they kind of prevent you from having a social life being afraid to socialise and it will end up affecting academic performance, making the grades to fall.*

These findings highlight the complex, intersecting pressures that rural-origin students face, which often impact their emotional well-being and ability to succeed. Participants also noted significant hurdles such as racial discrimination, cultural disconnect, inadequate equipment, and difficulties in forming connections and navigating technology and diverse social settings.

While some counselling services are available to reduce the impact of the identified hurdles, they are not tailored to address the specific needs of rural-origin students. Some respondents noted that accessible counselling

services help improve their well-being; however, there are lingering questions regarding their overall effectiveness as Interviewee 7 lamented: *"cultural gap, feeling estranged and lonely all contribute to mental and social challenges"*

Discussion and conclusion

This study explored how rural-origin students in South Africa experience and navigate higher education, focusing on the adequacy of institutional student support services in aiding their psychosocial adjustment and academic success. Using a sequential-explanatory mixed methods approach, the research found that existing support services often fail to meet the specific needs of these students. Instead, rural-origin students rely heavily on self-organised peer groups, referred to as *'invented'* channels in the study, to support one another, share coping strategies, and manage academic and personal challenges together. This highlights a critical gap in institutional responsiveness to diverse student backgrounds.

This key finding extends Walker and Mathebula's (2019) study that assessed the challenges faced by rural-origin students in coping with the demands of transitioning into urbanised HEI. Their findings provide a broader understanding of the key role played by higher education communities, family members, and academic staff in fostering students' aspirations. Walker and Mathebula's study validated the agency, resilience, and resourcefulness of rural-origin students in designing coping mechanisms to manage their unique university life challenges. However, Walker and Mathebula's (2019) study is suspect on three counts of comprehensiveness, methodological rigour, and spatial scope.

This study builds on the work of Walker and Mathebula by examining how student support services intersect with the psychosocial adjustment challenges faced by rural-origin students. Unlike their study, which relied solely on interviews with 30 students from three South African universities, this research employed methodological triangulation, combining a questionnaire survey with narrative inquiry. Although their qualitative sample was larger, this study's survey involved 280 respondents, offering broader insight into the types of support services available to both urban- and rural-origin students. This provided a solid foundation for then focusing more specifically on rural-origin experiences. Additionally, Walker and Mathebula's study did not include rural-based HEIs, which, despite their geographical location, often reflect urbanised academic cultures. This study addresses that gap by incorporating such institutions and drawing participants from at least four different HEIs using snowballing, helping to reduce spatial bias and improve the generalisability of the findings.

Extending Walker and Mathebula's (2019) study, a second key finding of this research is the pronounced absence of student support services specifically designed for rural-origin students. This emerged from an analysis of the intersection between available student services, the unique challenges faced by rural-origin students, and their psychosocial adjustment needs. The issue is likely exacerbated by the lack of reliable data on the number of rural-origin students within these HEIs (Statista, 2023; Czerniewicz & Brown, 2014). This finding is critical in explaining why many of these students resort to self-invented resilience strategies to navigate the transition from high school to urbanised academic environments.

Despite the contribution of this study in extending Walker and Mathebula's (2019) work, it has sampling limitations. The questionnaire survey did not reach the threshold of 384 initially targeted. However, this was compensated by a high response rate which surpasses the average of online surveys. Furthermore, only eight participants took part in the narrative inquiry, which falls below the minimum acceptable sample size to guarantee conclusive power. Despite efforts to ensure diverse representation from South African HEIs, the sample may not fully capture rural-origin students' experiences. Additionally, the nine-month data collection period from May 2023 to January 2024 may introduce temporal biases. The voluntary nature of participation and absence of incentives could affect response rates and introduce self-selection biases. Furthermore, the study's exclusive focus on student perspectives, to the exclusion of institutional viewpoints, potentially introduced bias into the research data and findings. And, student strikes in public universities during the research period may influence availability and response accuracy. These limitations underscore the need for further research with larger, diverse samples and consideration of external factors to enhance findings' robustness and generalisability.

Despite these limitations, this study provides student-driven views based on what they perceive could improve student support services. All the participants concurred that pre-enrollment exposure initiatives, such as orientation programmes before formal entry, would help them to familiarise with the university setting and urban dynamics. While they recognised the value of in-person visits, they acknowledged that time, travel, and cost could be prohibitive. As such, they suggested low-cost alternatives like virtual campus tours, digital orientation videos, and online peer mentoring as more accessible options.

The proposal to have virtual pre-enrollment orientation tools is not without its challenges. It may not be fully viable in many South African and other African rural contexts due to barriers such as limited internet access, low

digital literacy, high data costs, and unreliable electricity. Acknowledging these realities, alternative approaches could include printed pre-enrollment guides, community-based information sessions hosted at local schools or education centres, or radio segments explaining university systems and urban expectations. Over time, investment in low-data, mobile-accessible digital content, and partnerships with Non-Governmental Organisations (NGOs) or local municipalities could expand reach. These suggestions highlight the need for context-sensitive strategies that progressively close the access gap without assuming full digital readiness.

Another proposal involves having tailored psychosocial support mechanisms such as culturally sensitive counselling and facilitated peer groups, to help students process emotional and adjustment-related challenges. This can be partly enabled by early identification of rural-origin students during the admissions or registration process, to allow for more targeted support interventions. For this arrangement to realise its intended purpose, most participants proposed clearer communication about available support services and training of student support staff to improve cultural sensitivity regarding the needs of rural-origin students.

Riding on existing informal structures such as peer-to-peer support systems, it has been suggested that new rural-origin students can be deliberately paired with experienced students who have successfully navigated similar transitions. These student-driven insights reflect a strong awareness of the gaps in current support systems and a desire for more inclusive, accessible, and responsive higher education environments. Future studies should investigate institutional perspectives and feasible interventions or mechanisms to optimally support rural-origin students' psychosocial well-being and academic success.

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