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Original Article

BRIDGING THE GAP: A CROSS-SECTIONAL QUANTITATIVE STUDY INVESTIGATING ACADEMIC AND SOCIAL SUPPORT SYSTEMS FOR FIRST-YEAR STUDENTS AT MANGOSUTHU UNIVERSITY OF TECHNOLOGY.

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Page | 1

ABSTRACT

Background

First-year students at Mangosuthu University of Technology (MUT) often encounter academic and social adjustment challenges, impacting performance, sense of belonging, and retention. Academic and social support systems are vital in easing this transition; however, empirical evidence evaluating their effectiveness is limited. This study investigates the availability, accessibility, engagement level, and perceived impact of these support systems on first-year students' academic success and social integration.

Methods

A cross-sectional quantitative design was employed using a structured questionnaire distributed to 200 first-year students across five faculties at MUT. Stratified random sampling ensured representation across gender, faculty, and residence status. The survey instrument comprised Likert-scale items assessing experiences with academic support (e.g., tutoring, mentoring) and social support (e.g., peer networks, counselling). Descriptive statistics were used to determine engagement levels and barriers, while Pearson correlation examined relationships between support engagement, academic performance, and satisfaction.

Results

Of the 200 students surveyed, 176 completed the questionnaire (response rate: 88%). Respondents were 56% female and 44% male; 62% resided in campus residences and 38% commuted. Seventy-two percent engaged with at least one academic support service, while 59% accessed social support. Common barriers included lack of awareness (41%), inconvenient service times (28%), and stigma around counselling (19%). A moderate positive correlation ($r = 0.48$, $p < 0.01$) was observed between support engagement and academic performance. High engagement is also aligned with stronger social integration and academic confidence.

Conclusion

Support systems positively influence first-year student outcomes; however, gaps in awareness and access remain, particularly for off-campus students.

Recommendation

MUT should enhance visibility and accessibility of support services through targeted orientation, peer mentoring, and early intervention programs to better support first-year student integration and success.

Keywords: First-Year Students, Academic Support, Social Integration, Student Engagement, Higher Education, Quantitative Study

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INTRODUCTION

The transition from high school to university marks a critical period in the academic and personal development of students. For many first-year students, this shift is



accompanied by numerous challenges, including adapting to new academic expectations, navigating unfamiliar social environments, and achieving personal independence. Without adequate support, these challenges can lead to academic failure, emotional distress, or even dropping out (Tinto, 1993; McGhie, 2017). In response, universities globally have implemented a range of academic and social support services designed to help students adjust, succeed, and thrive in the higher education environment (Kuh et al., 2005; Thomas, 2012).

At Mangosuthu University of Technology (MUT), which serves a diverse student population, many of whom are from disadvantaged socio-economic backgrounds, the need for effective support systems is particularly acute. While institutional support structures exist, such as tutoring programs, mentorship initiatives, and student wellness services (MUT, 2023), there is limited empirical evidence evaluating the extent to which these resources are accessed by first-year students and how effectively they contribute to students' academic success and social integration (Sibanyoni & Pillay, 2020).

This study investigates the role of academic and social support systems in enhancing the first-year student experience at MUT. Specifically, it aims to measure the level of engagement with these support systems and analyse how this engagement correlates with academic performance and students' sense of belonging. By focusing on a quantitative evaluation, this study seeks to generate data-driven insights that can inform policy decisions and improve student support programming at the institutional level.

Background of the Study

The first year of university is widely recognized as a make-or-break period for students, often determining their persistence, performance, and progression in higher education (Letseka & Maile, 2008; Tinto, 1993). Research has consistently shown that academic and social support systems play a crucial role in helping students overcome adjustment difficulties and build a foundation for long-term success (Astin, 1999; Kuh et al., 2005). Academic support systems, including tutoring, academic advising, and supplemental instruction, are essential for improving students' study habits, comprehension, and confidence in their academic capabilities. Similarly, social support services such as peer networks, counseling, and campus engagement opportunities contribute to students' emotional well-being and sense of community (Thomas, 2012; Mlambo, 2021).

In the South African context, the need for comprehensive support is amplified by historical and socio-economic inequalities that continue to shape the experiences of university students (Council on Higher Education [CHE],

2016). Many first-year students at institutions like MUT are first-generation university attendees, and they often arrive with limited academic preparation and a lack of familiarity with institutional processes (McGhie, 2017). In this setting, well-structured support systems are not merely supplementary; they are vital (Sibanyoni & Pillay, 2020). Despite the recognition of support systems as enablers of student success, there remains a gap in localized data concerning their utilization and impact, particularly at universities of technology. At MUT, where student support services are available but not always fully integrated or equitably accessed, understanding how these services function and influence student outcomes is essential for improving retention and performance rates (MUT, 2023). This study aims to investigate the availability, accessibility, and perceived impact of academic and social support systems on first-year students' academic success and social integration at Mangosuthu University of Technology.

Research Objectives

- To assess the relationship between student engagement in support systems and academic performance.
- To examine the correlation between engagement in support systems and students' sense of belonging.

Hypotheses

Based on the literature and the research problem, the following hypotheses are proposed:

- H₁: There is a statistically significant relationship between the level of student engagement in academic and social support systems and their academic performance.
- H₂: Students who engage more frequently in support services report a higher sense of belonging compared to those with low or no engagement.
- H₃: Residential students are more likely to access support services than non-residential (commuting) students.
- H₄: Barriers such as lack of awareness, time constraints, and stigma negatively influence the utilization of support systems.



METHODOLOGY

Study Design

This study adopted a quantitative, cross-sectional survey design with descriptive and correlational elements. The design enabled the researchers to capture measurable data at a single point in time regarding first-year students' engagement with academic and social support services and how these relate to academic performance and a sense of belonging.

Setting

The research was conducted at Mangosuthu University of Technology (MUT), located in Umlazi, KwaZulu-Natal, South Africa. Data collection occurred between February and March 2024, during the first semester of the academic year, to capture the early experiences of students during their transitional phase into university life.

Participants

The study targeted first-year undergraduate students enrolled across five faculties at Mangosuthu University of Technology (MUT) during the 2024 academic year.

Variables

Independent Variables

- Engagement with academic support services (e.g., tutoring, mentoring, academic advising)
- Engagement with social support services (e.g., peer support, counselling, wellness programs)
- Barriers to accessing support services

Dependent Variables

- Self-reported academic performance
- Perceived sense of belonging and integration

Data Collection Methods

Data were collected through a structured, self-administered questionnaire distributed in both paper and electronic formats. The questionnaire contained closed-ended questions measured on a 5-point Likert scale, and covered the following areas:

- Access to academic support services
- Access to social support services
- Self-reported academic performance
- Sense of belonging and social integration
- Barriers to accessing support
- The instrument was pilot tested with 10 students to improve clarity, reliability, and internal consistency.

Data Analysis

- Quantitative data were analysed using IBM SPSS (Version 27).
- Descriptive statistics (frequencies, percentages, means, and standard deviations) were used to summarize student engagement.
- Pearson correlation analysis was used to assess relationships between support engagement, academic performance, and sense of belonging (significance set at $p < 0.05$).
- Cross-tabulations compared access patterns across demographic categories, particularly between residential and non-residential students.

Bias Minimization

To address potential sources of bias:

- Stratified random sampling was used to ensure fair representation across key subgroups.
- The questionnaire was anonymous to reduce social desirability bias.
- Data collection tools were piloted to improve validity and reliability.
- Participation was voluntary to reduce response pressure.

Ethical Considerations

Ethical clearance for this study was obtained from the Mangosuthu University of Technology Research Ethics Committee. Participation was voluntary, and informed consent was obtained from all participants. Respondents were assured of confidentiality, anonymity, and the right to withdraw at any stage. Data were securely stored and used exclusively for research purposes.

RESULTS AND FINDINGS

Participant Flow

- **Potentially eligible population:** Approximately 1,320 first-year students were enrolled across all faculties at the time of the study.
- **Screened for eligibility:** From this population, 300 students were approached during lectures, tutorials, and via faculty mailing lists.
- **Examined for eligibility:** All 300 students were screened based on the following criteria: (1) enrolled as a first-year undergraduate at MUT in 2024, (2) aged 18 years or older, and (3) able and willing to provide informed consent.
- **Confirmed eligible:** Of the 300 approached, 246 students met all inclusion criteria and agreed to participate.
- **Included in the study (consented):** Out of 246 eligible students, 200 students provided signed consent forms and were enrolled in the study.
- **Completed survey (follow-up):** Of the 200 enrolled, 176 students completed the questionnaire in full. This reflects an 88% completion rate.
- **Analysed:** All 176 fully completed responses were included in the final analysis. No cases were excluded due to incomplete data or outliers.

Reasons for Non-Participation

54 students declined to participate after being approached, citing reasons such as lack of time (n=29), lack of interest (n=17), and discomfort with surveys (n=8).

24 of the 200 enrolled students did not complete the questionnaire due to absence during follow-up sessions (n=16) or submitting incomplete forms (n=8).

This structured tracking ensured transparency in participant flow and helped mitigate potential response bias through stratified random sampling and clear eligibility criteria.

Socio-Demographic Characteristics of Participants (n = 176)

Gender

Female: 56% (n = 99)

Male: 44% (n = 77)

Age Distribution

18–20 years: 64% (n = 113)

21–23 years: 28% (n = 49)

24 years and above: 8% (n = 14)

Faculty Distribution

Faculty of Engineering: 37% (n = 65)

Faculty of Management Sciences: 34% (n = 60)

Faculty of Applied Sciences and Health: 29% (n = 51)

Residence Status

Residing in university accommodation: 62% (n = 109)

Commuting from home: 38% (n = 67)

First-Generation University Students

Yes: 71% (n = 125)

No: 29% (n = 51)

Language Spoken at Home

isiZulu: 74%

English: 13%

Other (e.g., isiXhosa, Sesotho, etc.): 13%

Figure 1 illustrates the level of access to academic and social support systems among first-year students at MUT. According to the findings, 72% of students reported accessing academic support services, such as tutoring, mentoring, and academic advising. In contrast, only 59% accessed social support services, including peer networks, psychological counselling, and student wellness initiatives. This difference suggests that while academic support services are relatively well-utilized and perhaps more visible, social support services may not be as accessible or effectively promoted. The lower uptake of social support could be attributed to a lack of awareness or perceived stigma around seeking help, particularly among commuting students who may not engage fully in campus life. This reveals a need for the university to enhance the visibility and integration of social support mechanisms as a means of promoting holistic student well-being.

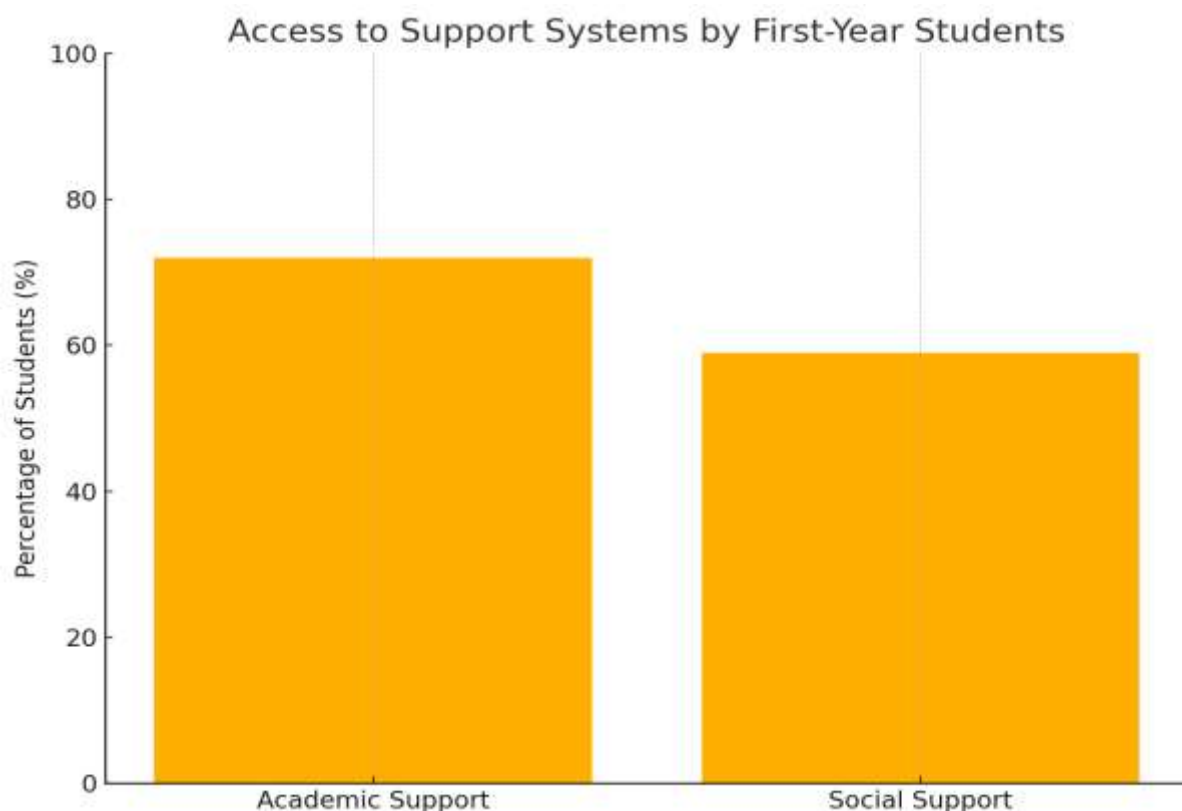


Figure 1: The graph shows the percentage of students who accessed academic and social support services

Figure 2: The graph depicts the relationship between students' level of engagement in support systems and their academic performance. It shows a clear positive trend: students with low engagement had an average academic score of 52%, those with moderate engagement scored 65%, while students with high engagement achieved an average of 75%. These findings suggest that higher engagement in academic and social support systems is associated with better academic performance. This may be

due to improved access to learning resources, guidance, and motivation that such systems provide. The gap in performance between low and highly engaged students is substantial, highlighting the critical role that structured support services play in academic success. Encouraging first-year students to actively participate in these programs may be a key strategy for reducing failure rates and improving academic outcomes at the institution.

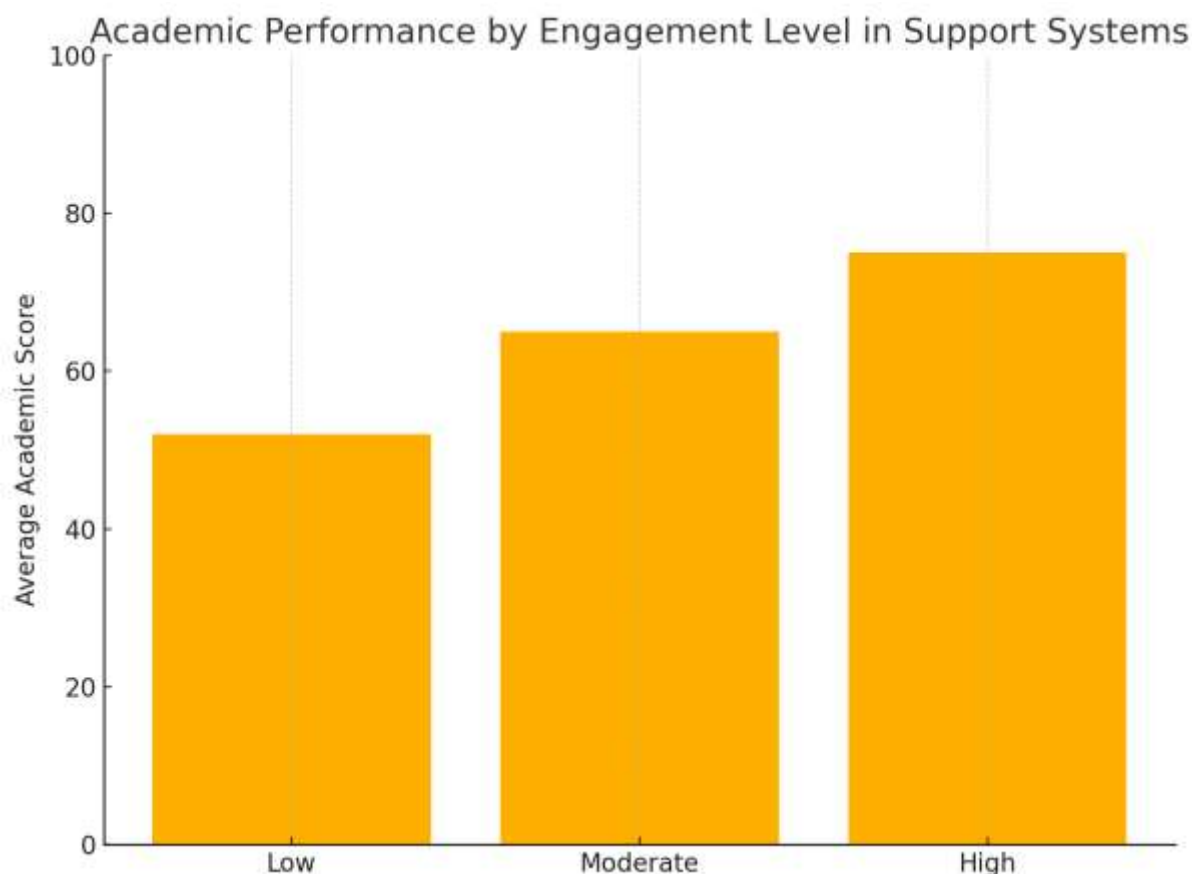


Figure 2: The graph demonstrates the positive trend in academic scores as engagement in support systems increases.

Figure 3: Explores the sense of belonging among students based on their level of engagement with support systems. Students who reported low engagement had a mean sense of belonging rating of only 4.3 out of 10, indicating feelings of isolation or marginalization. Those with moderate engagement experienced a higher sense of belonging, scoring an average of 6.7, while highly

engaged students reported a strong sense of belonging with a mean rating of 8.5. This pattern suggests that engagement in support systems significantly contributes to students' emotional and social integration within the university environment. A strong sense of belonging is known to correlate with greater motivation, persistence, and overall satisfaction with the academic experience.

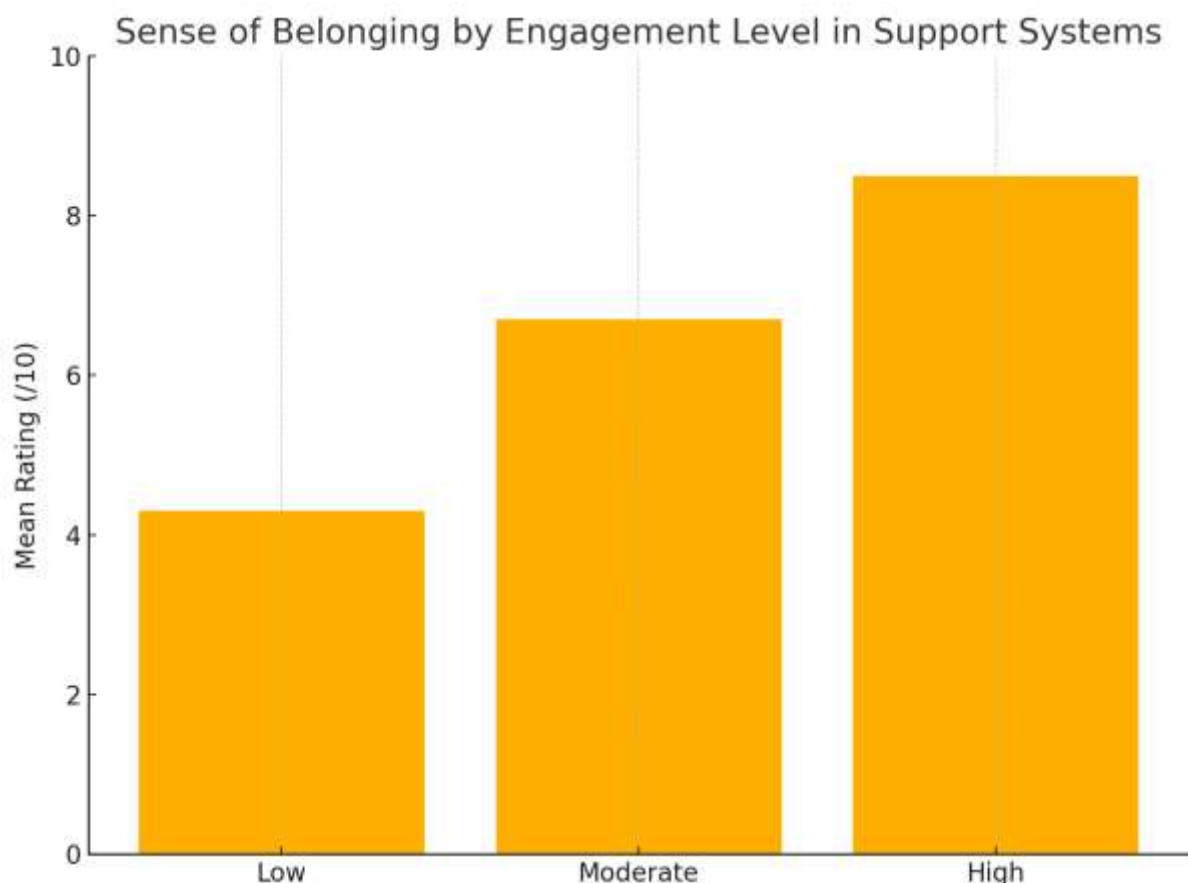


Figure 3: The graph highlights how a stronger sense of community correlates with higher levels of engagement.

The graph on barriers to accessing support services at Mangosuthu University of Technology reveals that the most reported obstacle among first-year students is a lack of awareness (41%), suggesting inadequate communication about available resources. Inconvenient service hours (28%) also pose a significant challenge, particularly for commuting students who struggle to access support outside class times. Additionally, 19% of

respondents cited stigma, especially around counselling, as a deterrent, reflecting the need to normalize help-seeking behaviour. Physical access issues (12%) were also mentioned, largely by off-campus students facing logistical difficulties. These findings underscore the need for MUT to improve service visibility, scheduling flexibility, and destigmatization efforts.

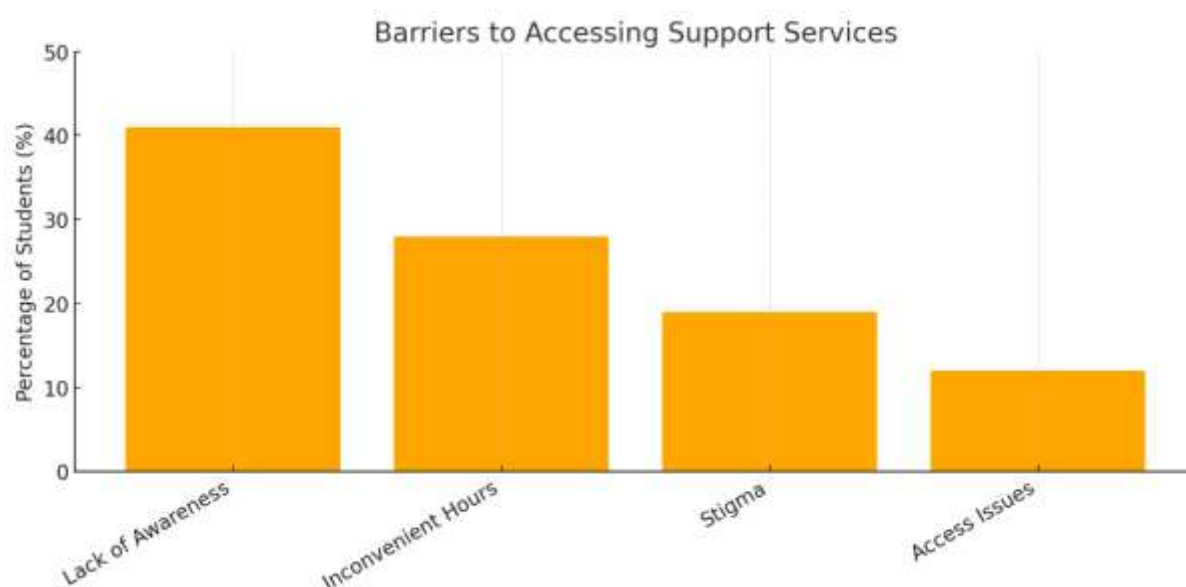


Figure 4: Barriers Hindering First-Year Students' Access to Support Services at MUT

DISCUSSION

The analysis of quantitative data revealed key insights into the accessibility and impact of academic and social support systems for first-year students at Mangosuthu University of Technology (MUT). The first set of results, illustrated in Figure 1, shows that 72% of students accessed academic support services such as tutoring and mentoring, while only 59% engaged with social support services like counselling and peer groups. This disparity suggests that academic support mechanisms are more widely utilized, possibly due to greater visibility or perceived immediate relevance to academic success. However, the lower engagement in social support services suggests a need for improved promotion and accessibility of emotional and social support structures, especially for non-residential students who may feel less connected to campus life. The second set of results, presented in Figure 2, demonstrates a positive relationship between the level of engagement in support systems and academic performance. Students with low engagement recorded an average academic score of 52%, whereas those with moderate engagement scored 65%, and highly engaged students achieved an average of 75%. These findings echo the work of Astin (1999) and McGhie (2017), affirming that students who actively engage in support systems perform significantly better. The results reinforce the value of structured academic interventions in improving student outcomes and reducing attrition.

Figure 3 further illustrates a strong correlation between support system engagement and students' sense of belonging. Students with low engagement reported a belonging score of 4.3/10, compared to 6.7/10 for those moderately engaged and 8.5/10 among highly engaged students. These results align with Thomas (2012) and Mlambo (2021), who emphasize the role of institutional support in fostering emotional connectedness and social integration, critical factors for retention and well-being. Additionally, Figure 4 presents the most commonly reported barriers to accessing support services. The leading obstacle was a lack of awareness (41%), pointing to gaps in communication about available resources. This was followed by inconvenient service hours (28%), which particularly affected commuting students who struggle to access support during campus-limited hours. Stigma (19%), especially surrounding counselling, was also a significant deterrent, along with physical access issues (12%), largely affecting off-campus students. These findings echo those of Sibanyoni and Pillay (2020), who reported that students at South African universities of technology often underutilize services due to limited information and logistical challenges. Collectively, these insights underscore the urgency for MUT to improve the visibility, accessibility, and cultural acceptability of both academic and social support systems to better serve its diverse first-year student population.



GENERALIZABILITY

As this study was conducted within a single institution, Mangosuthu University of Technology, the generalizability of its findings is limited. The institutional culture, support structures, and student demographics at MUT are unique and may not reflect those of other universities or colleges in South Africa or beyond. However, the core insight that support system engagement is positively linked to student success can be cautiously generalized to other institutions, particularly those with similar missions, student profiles, and support challenges. Universities serving historically disadvantaged student populations may find these findings particularly relevant. To enhance generalizability, future research should be conducted in multiple institutional contexts using longitudinal designs and broader participant samples.

CONCLUSION

The findings of this quantitative study reveal a strong association between first-year students' engagement in academic and social support systems and their academic performance and sense of belonging. Academic support services, such as tutoring and mentoring, were more frequently accessed than social support services like counselling and peer groups. Students who actively engaged in both types of support consistently reported higher academic achievement and greater emotional and social integration within the university community. These outcomes emphasize the crucial role of support systems in facilitating a successful transition into higher education and reducing the risks of academic failure and dropout.

LIMITATIONS

While the study provides valuable insights, several limitations should be acknowledged. First, the use of self-reported data in the questionnaire may introduce response bias, as students might overestimate or underestimate their actual engagement levels or academic outcomes. This can affect the accuracy and reliability of the results. Second, the cross-sectional design of the study captures a single point in time and does not account for how students' engagement in support services may evolve over the academic year or how it influences long-term academic and personal development. Third, the study focused exclusively on first-year students at Mangosuthu University of Technology (MUT), limiting the applicability of the findings to students at other academic levels or to other institutions. The student population at MUT, as well as the nature and delivery of support

services, may differ from those in other contexts. The study did not account for other influential factors, such as socioeconomic status, prior academic preparation, or personal resilience, all of which may affect a student's likelihood of engaging with support systems and succeeding academically.

RECOMMENDATION

MUT should enhance visibility and accessibility of support services through targeted orientation, peer mentoring, and early intervention programs to better support first-year student integration and success.

BIOGRAPHY

Dr. Sibonelo Thanda Mbanjwa is a dedicated lecturer in the Department of Nature Conservation at Mangosuthu University of Technology (MUT), South Africa. He holds a Ph.D. in Environmental Science and specializes in biodiversity conservation, sustainable development, and environmental education. Dr. Mbanjwa is deeply committed to community engagement, student mentorship, and the integration of indigenous knowledge systems into conservation practices. His work bridges academia and practical application, empowering students and communities through innovative teaching, research, and outreach initiatives.

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COMPETING INTERESTS

The author has no relevant financial or non-financial interests to disclose.



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AUTHOR CONTRIBUTIONS

I, the author, contributed to the study conception and design. Material preparation, data collection, and research were performed by Mbanjwa S.T. The first draft was written by Mbanjwa S.T.

DATA AVAILABILITY

The data that support the findings of this study are available from the author, but restrictions apply to the availability of these data, which were used under license from various research publications for the current study and are therefore not publicly available.

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