



SERVICE QUALITY AND STUDENT SATISFACTION UNDER SECURITY THREAT: AN APPLICATION OF THE HEDPERF MODEL

¹ Manji Wapshak Kumdi *, ² James Yunana Dashang, & ³ Joseph Ameh

*Corresponding authors' email: mwkumdi@plasu.edu.ng

¹ Department of Management Studies, Plateau State University, Bokkos – Nigeria

^{2&3} Department of Entrepreneurship, Plateau State University, Bokkos – Nigeria

ABSTRACT

This study investigates the influence of service quality on student satisfaction in a terrorism-threatened environment using the Higher Education Performance (HEdPERF) model, while drawing on Terror Management Theory (TMT) to explain students' perceptions under conditions of insecurity. Specifically, the study examines the effects of non-academic aspects, academic aspects, reputation, access, and programme issues on student satisfaction. Data were collected in the first and second quarters of 2026 from undergraduate students using a structured questionnaire administered through Google Forms. Employing a simple random sampling approach, 600 questionnaires were distributed via email, yielding 510 responses (85.0% response rate), of which 488 were valid and usable for analysis (81.3% of the questionnaires distributed and 95.7% of responses received). Data were analysed using covariance-based structural equation modelling (CB-SEM). The findings reveal that non-academic aspects significantly enhance student satisfaction by providing essential support services that help students cope with security-related anxieties. In contrast, academic aspects and programme issues negatively influence satisfaction, suggesting that disruptions associated with insecurity adversely affect students' educational experiences. Reputation and access were found to have no significant effect on satisfaction. The findings support the propositions of TMT by indicating that supportive non-academic services mitigate existential concerns, whereas academic and programme-related disruptions intensify students' perceptions of uncertainty and insecurity. The study highlights the need for higher education institutions operating in crisis-affected regions to strengthen service quality dimensions that enhance student well-being, satisfaction, and preparedness for socio-economic transformation through skills-based education.

Keywords: HEdPERF Model, Higher Education, Terrorism, Service Quality, Student Satisfaction

JEL Classification Code: I23, I28, M31

1.0 Introduction

Higher education institutions worldwide increasingly recognize service quality as a critical determinant of student satisfaction, retention, institutional competitiveness, and long-term sustainability. Consequently, models such as the Higher Education Performance (HEdPERF) framework have been widely adopted to assess service quality within university settings (Abdullah, 2005, 2006; Owusu et al., 2023; Bahadur, 2024). Existing evidence consistently demonstrates that dimensions such as academic quality, administrative support, institutional reputation, programme delivery, and accessibility significantly shape students' educational experiences and satisfaction levels. However, most studies have been conducted in relatively stable environments, with limited attention given to how persistent insecurity and violent conflict may alter students' perceptions of service quality and institutional performance.

The Nigerian higher education sector provides a particularly relevant context for examining this issue. In recent years, insecurity arising from terrorism, communal violence, and armed attacks has increasingly affected educational institutions and their host communities across Nigeria. Plateau State, located in North-Central Nigeria, has been one of the most affected areas. Following coordinated attacks on communities in Bokkos Local Government Area on 24 December 2023, the International Organization for Migration (IOM) reported that 331 people were killed, 153 injured, 1,868 households displaced, and 1,190 shelters destroyed (International Organization for Migration [IOM], 2024). Similarly, Amnesty International documented that 1,336 people were killed and 29,554 displaced across Bokkos, Mangu, and Barkin Ladi Local Government Areas between December 2023 and February 2024 (Amnesty International Nigeria, 2024). More recently, insecurity directly affected the University of Jos community. According to the Vice-Chancellor of the University of Jos, two students lost their lives, while two other students and a staff member sustained injuries during security-related incidents in Jos in April 2026 (Abdulsalami, 2026). These recurring security incidents have created an atmosphere of fear, uncertainty, and vulnerability that extends beyond surrounding communities to higher education institutions operating within the state. Consequently, students in Plateau State University, Bokkos and the University of Jos may evaluate service quality differently from students in more stable environments, placing greater emphasis on institutional support, campus security, counselling services, and administrative responsiveness.

To assess service quality within higher education, this study adopts the HEdPERF model developed by Abdullah (2005). The model conceptualizes service quality through five dimensions: non-academic aspects, academic aspects, reputation, access, and programme issues. Empirical studies conducted in diverse contexts have demonstrated the utility of HEdPERF in explaining student satisfaction (Ali et al., 2020; Owusu et al., 2023; Bahadur, 2024). Nevertheless, the model has rarely been applied within environments characterized by persistent insecurity and terrorism-related threats. Consequently, little is known about whether the relative importance of the HEdPERF dimensions changes when students operate under conditions of heightened fear, uncertainty, and security vulnerability.

To provide a theoretical explanation for these dynamics, this study integrates Terror Management Theory (TMT). TMT posits that exposure to existential threats heightens mortality awareness and motivates individuals to seek psychological security through trusted institutions, supportive relationships, and meaningful social structures (Greenberg et al., 1986; Pyszczynski et al., 2021). Within the university context, students experiencing security threats may attach greater importance to institutional support mechanisms that reduce anxiety and enhance their sense of safety. Therefore, the integration of TMT with HEdPERF offers a useful lens for understanding how insecurity may reshape students' evaluation of service quality dimensions.

Despite the growing literature on service quality and student satisfaction, several gaps remain. First, existing HEdPERF studies have largely focused on universities operating in stable socio-political environments, with limited evidence from conflict-affected or insecurity-prone higher education institutions. Second, studies examining service quality in Nigerian universities have paid little attention to how persistent security threats influence students' satisfaction with institutional services. Third, no known study has integrated the HEdPERF model and Terror Management Theory to explain student satisfaction within terrorism-threatened university environments in Plateau State, Nigeria. Finally, empirical evidence comparing service quality perceptions among students in Plateau State University, Bokkos and the University of Jos remains scarce. Addressing these gaps is important for developing

context-specific strategies that enhance student satisfaction and institutional resilience in conflict-affected settings.

Accordingly, this study examines the influence of the HEdPERF dimensions (non-academic aspects, academic aspects, reputation, access, and programme issues) on student satisfaction in two universities operating within an insecurity-prone environment. By integrating HEdPERF and Terror Management Theory, the study extends the service quality literature and provides practical insights for university administrators and policymakers seeking to improve higher education service delivery in regions experiencing persistent security challenges.

The remainder of this paper is organized as follows. Section Two reviews the relevant literature and develops the study hypotheses. Section Three presents the methodology adopted for the study. Section Four reports and discusses the empirical findings. Section Five concludes the study, highlights its theoretical and practical implications, identifies limitations, and provides suggestions for future research.

2.0 Literature Review and Hypotheses Development

2.1 Conceptual Review

2.1.1 Service Quality in Higher Education

Service quality refers to the extent to which an institution meets or exceeds the expectations of its stakeholders through the effective delivery of services (Parasuraman et al., 1988). In higher education, service quality encompasses the academic and non-academic experiences provided by universities to facilitate students' learning, personal development, and overall educational satisfaction (Abdullah, 2005, 2006). Unlike traditional service organizations, universities provide complex services that involve continuous interaction between students, academic staff, administrators, and institutional systems. Consequently, service quality in higher education extends beyond tangible facilities to include teaching effectiveness, administrative responsiveness, accessibility of services, institutional reputation, and programme relevance.

The increasing marketization of higher education has heightened the importance of service quality as universities compete to attract, retain, and satisfy students (Owusu et al., 2023). Students are increasingly viewed as primary stakeholders whose perceptions of institutional performance influence enrolment decisions, persistence, loyalty, and positive word-of-mouth recommendations (Magasi et al., 2023). Consequently, universities continuously seek mechanisms for evaluating and improving service quality to enhance institutional competitiveness and sustainability.

Several models have been developed to assess service quality. Among these, SERVQUAL (Parasuraman et al., 1988) remains one of the most widely applied frameworks. However, scholars have argued that the unique characteristics of higher education require context-specific measures that capture the multidimensional nature of university services (Abdullah, 2005). This led to the development of the Higher Education Performance (HEdPERF) model, which specifically addresses the service quality dimensions relevant to educational institutions.

2.1.2 The HEdPERF Model

The Higher Education Performance (HEdPERF) model was developed by Abdullah (2005) to provide a comprehensive and education-specific framework for measuring service quality in higher education institutions. Unlike SERVQUAL, which was originally designed for

commercial service settings, HEdPERF captures dimensions that reflect the unique academic and administrative functions of universities.

The model comprises five dimensions: non-academic aspects, academic aspects, reputation, access, and programme issues. These dimensions collectively represent students' evaluations of institutional performance and service delivery.

Non-Academic Aspects

Non-academic aspects refer to the quality of administrative and support services provided by the institution. These include staff responsiveness, counselling services, student support systems, complaint handling mechanisms, and general administrative efficiency (Abdullah, 2006). Effective non-academic services contribute significantly to students' overall educational experiences by creating a supportive learning environment.

Recent studies indicate that non-academic services often exert a strong influence on student satisfaction because they shape students' day-to-day interactions with the institution (Owusu et al., 2023; Magasi et al., 2023). In conflict-prone environments, non-academic support services may assume even greater importance because students rely on institutions for security information, psychological support, crisis communication, and emotional reassurance.

Academic Aspects

Academic aspects encompass teaching quality, lecturers' competence, curriculum delivery, assessment procedures, and the overall learning experience (Abdullah, 2005). This dimension represents the core educational function of universities and directly influences students' academic achievement and skill acquisition.

Studies consistently identify academic quality as one of the strongest predictors of student satisfaction because it directly affects students' learning outcomes and employability prospects (Bahadur, 2024; Bouranta, 2024). Students generally expect lecturers to demonstrate subject expertise, provide constructive feedback, and employ effective pedagogical approaches that facilitate learning. However, the influence of academic aspects may vary across contexts depending on environmental conditions and institutional circumstances.

Reputation

Institutional reputation refers to stakeholders' overall perception of a university's credibility, prestige, reliability, and academic standing (Abdullah, 2006). Reputation is developed through consistent performance, academic excellence, graduate employability, research output, and public trust.

A strong institutional reputation positively influences students' confidence in the value of their educational investment and often contributes to higher satisfaction levels (Hasan & Hosen, 2022; Lacap & Cortez, 2023). Universities with favourable reputations are generally perceived as more capable of providing quality education, career opportunities, and institutional stability. In environments characterized by insecurity, reputation may also reflect perceptions of institutional resilience and crisis-management capability.

Access

Access refers to the ease with which students can obtain educational services, facilities, information, and institutional support (Abdullah, 2006). This dimension includes physical

accessibility, availability of learning resources, communication channels, digital infrastructure, and responsiveness of university personnel.

Accessible services reduce barriers to learning and enhance students' ability to engage effectively with academic and administrative systems (Bouranta et al., 2024). The increasing adoption of digital learning platforms has further expanded the concept of access to include online learning resources, virtual support systems, and information technology infrastructure. In insecurity-prone environments, access may also encompass emergency communication systems and safe access to campus facilities.

Programme Issues

Programme issues relate to the relevance, flexibility, diversity, and quality of academic programmes offered by universities (Abdullah, 2005). This dimension reflects the extent to which educational programmes align with labour market requirements, students' career aspirations, and societal needs.

Students generally express higher satisfaction when academic programmes are well-structured, professionally relevant, and responsive to changing industry demands (Ahmad & Wardhani, 2023). Programme flexibility also becomes important in environments where disruptions may affect normal academic schedules. Consequently, students may evaluate programme quality based on both academic relevance and institutional adaptability.

2.1.3 Student Satisfaction

Student satisfaction refers to the overall evaluation of educational experiences based on the comparison between students' expectations and their actual experiences within an institution (Elliott & Healy, 2001). It represents a cumulative judgment regarding the quality and effectiveness of services provided by a university.

Within higher education, student satisfaction serves as a critical performance indicator because it influences retention, loyalty, academic engagement, graduation rates, and institutional reputation (Ali et al., 2020). Satisfied students are more likely to remain enrolled, participate actively in academic activities, recommend the institution to prospective students, and maintain positive relationships with the university after graduation.

Student satisfaction is a multidimensional construct influenced by both academic and non-academic experiences. Academic quality, institutional support, campus facilities, accessibility of services, and programme relevance all contribute to students' evaluations of their university experiences (Magasi et al., 2023). However, the relative importance of these factors may vary depending on contextual circumstances.

2.2 Empirical Review

Empirical evidence from different parts of the world consistently demonstrates that service quality is a significant predictor of student satisfaction in higher education institutions. Using the HEdPERF framework, Abdullah (2006) found that academic quality, administrative services, and institutional reputation significantly influenced students' satisfaction in Malaysian universities. The study argued that students evaluate universities based on both academic and non-academic experiences, suggesting that service quality is a multidimensional construct. However, the study was conducted within a relatively stable educational environment and did not consider how external threats might influence students' evaluations of institutional services.

Similarly, Bahadur, (2024) investigated the relationship between service quality and student satisfaction among university students in India and Nepal. The findings revealed that academic aspects and non-academic support services were significant determinants of student satisfaction. The positive effect of academic quality was attributed to its direct influence on learning outcomes and students' future career prospects, while administrative support enhanced students' overall educational experiences. Although the study reinforces the relevance of HEdPERF dimensions, it does not account for contexts where security concerns may alter students' priorities and expectations.

In Europe, Bouranta et al. (2024) reported that accessibility of digital learning platforms, responsiveness of university personnel, and quality of instructional services significantly enhanced student satisfaction. The authors argued that technological advancement and effective communication systems improved students' educational experiences. Nevertheless, the study was conducted within a post-pandemic context and focused primarily on digital service delivery rather than the influence of insecurity on service quality perceptions.

Likewise, Bouranta et al. (2024) found that teaching quality, curriculum relevance, and learning support services positively influenced student satisfaction in higher education institutions. The study suggested that students derive satisfaction when educational services meet their academic and professional expectations. However, the study did not examine whether these relationships remain consistent in environments characterized by persistent security threats and uncertainty.

Within Africa, service quality has similarly been identified as a critical determinant of student satisfaction. Owusu et al. (2023) examined service quality among university students in Ghana and found that academic quality, administrative responsiveness, and institutional reputation significantly influenced student satisfaction. The authors attributed these findings to students' expectations of efficient service delivery and effective academic support. While the study validates the HEdPERF model within an African context, it did not consider how environmental insecurity may influence service quality evaluations.

In Tanzania, Magasi et al. (2023) reported that access to educational resources, institutional support services, and staff responsiveness positively affected student satisfaction. The study emphasized that students value universities that provide accessible learning facilities and responsive administrative services. However, the study focused on conventional determinants of satisfaction without examining how conflict or insecurity may reshape students' perceptions of institutional performance.

In Nigeria, research on service quality and student satisfaction has gained increasing attention due to growing concerns regarding educational quality and institutional competitiveness. Yunusa and Umar (2020) found that academic service quality significantly influenced students' educational experiences and satisfaction in Nigerian universities. The study concluded that students were more satisfied when institutions provided competent lecturers, relevant curricula, and adequate learning resources. However, the study did not account for how insecurity might influence students' service quality perceptions.

Similarly, several Nigerian studies have reported positive relationships between administrative effectiveness, quality teaching, institutional reputation, and student satisfaction. These studies generally argue that students evaluate universities based on the extent to which institutional services meet their educational expectations. While these findings provide valuable insights into higher education service delivery, they largely reflect experiences from conventional university settings and offer limited evidence regarding institutions operating under persistent security threats.

Beyond service quality research, studies on insecurity and education in Nigeria indicate that violent conflicts, communal crises, terrorism, and other forms of insecurity disrupt academic activities, increase psychological stress, and negatively affect students' learning experiences (Uzuegbu-Wilson, 2019; Nte, 2023). These studies suggest that students in conflict-affected environments may develop unique educational priorities and expectations. However, they focus primarily on educational disruption and psychological consequences rather than on students' evaluation of service quality dimensions.

More specifically, empirical evidence examining service quality and student satisfaction in universities located within conflict-prone areas of North-Central Nigeria remains limited. Despite recurring security challenges in Plateau State and their implications for educational institutions, little empirical attention has been devoted to understanding how students of Plateau State University, Bokokos and the University of Jos evaluate service quality under conditions of persistent insecurity.

The reviewed literature demonstrates a broad consensus that service quality positively influences student satisfaction in higher education institutions. Across international, African, and Nigerian contexts, academic quality, non-academic support services, institutional reputation, access to resources, and programme relevance have emerged as important determinants of students' educational experiences and satisfaction. The positive relationships reported in previous studies are generally attributed to the ability of quality services to enhance learning outcomes, reduce administrative challenges, and strengthen students' confidence in their institutions.

Despite these contributions, several limitations remain evident. First, existing studies have largely been conducted within relatively stable educational environments, with limited attention given to universities operating under persistent security threats. Second, although insecurity has been shown to disrupt educational activities and influence students' psychological well-being, few studies have examined how such conditions shape students' evaluation of service quality dimensions. Third, empirical evidence from conflict-affected higher education institutions in Nigeria, particularly in Plateau State, remains scarce. Finally, the integration of Terror Management Theory with the HEdPERF framework has received little attention in higher education research despite its potential to explain how security threats influence students' service quality perceptions.

These limitations provide the motivation for the present study. By examining the influence of HEdPERF dimensions on student satisfaction among students of Plateau State University, Bokokos and the University of Jos, this study extends existing literature into a terrorism-threatened environment and offers context-specific evidence on service quality and student satisfaction within conflict-affected higher education institutions.

2.3 Theoretical Foundation

2.3.1 Higher Education Performance (HEdPERF) Model

The Higher Education Performance (HEdPERF) model, developed by Abdullah (2005), is a higher education-specific framework for measuring service quality. Unlike SERVQUAL, which was designed for general service industries, HEdPERF captures the unique nature of university services through five dimensions: non-academic aspects, academic aspects, reputation, access, and programme issues (Abdullah, 2005, 2006).

The model has been widely validated across different higher education contexts and consistently demonstrates that service quality significantly influences student satisfaction (Ali et al., 2020; Owusu et al., 2023; Bahadur et al., 2024). However, HEdPERF primarily focuses

on institutional service attributes and provides limited explanation of how external environmental threats may shape students' perceptions of service quality. Nevertheless, it offers an appropriate framework for examining the influence of service quality dimensions on student satisfaction in higher education institutions.

2.3.2 Terror Management Theory (TMT)

Terror Management Theory (TMT), proposed by Greenberg et al. (1986), explains how individuals respond to awareness of mortality. The theory argues that exposure to threats such as terrorism heightens mortality salience and increases the need for security, stability, and institutional trust (Pyszczynski et al., 2021).

In higher education settings, students exposed to insecurity may place greater value on university services that provide psychological reassurance and safety. Consequently, support services, security measures, and responsive administration may become more important determinants of satisfaction than in stable environments. Although widely applied in studies of terrorism and human behaviour, TMT has received limited attention in higher education service quality research.

This study integrates HEdPERF and TMT to explain student satisfaction in a terrorism-threatened environment. HEdPERF identifies the dimensions of service quality that influence satisfaction, while TMT explains how insecurity may alter the importance students attach to those dimensions. Specifically, heightened mortality salience may increase students' preference for services that provide safety, support, and institutional reassurance. Thus, HEdPERF explains the determinants of student satisfaction, whereas TMT provides the contextual lens for understanding these relationships under conditions of insecurity.

2.4 Hypotheses Development

2.4.1 Non-Academic Aspects and Student Satisfaction

Non-academic aspects constitute an important dimension of service quality within the HEdPERF framework and encompass administrative efficiency, staff responsiveness, counselling services, complaint handling mechanisms, and general student support services (Abdullah, 2005). These services shape students' interactions with the institution beyond the classroom and contribute significantly to their overall educational experience. Recent studies indicate that efficient administrative services and supportive institutional environments positively influence student satisfaction because they enhance students' sense of belonging and reduce service-related frustrations (Owusu et al., 2023; Magasi et al., 2023; Nguyen et al., 2024).

Nguyen et al. (2024) found that responsive student support services significantly enhanced students' overall university experience and satisfaction, particularly in environments characterized by uncertainty and rapid institutional change. Similarly, Rew et al. (2023) reported that effective student support mechanisms improved students' trust in institutional processes and increased satisfaction levels.

The positive relationship between non-academic aspects and student satisfaction may be particularly pronounced in environments characterized by insecurity. According to Terror Management Theory (TMT), exposure to threats increases individuals' need for psychological security and institutional trust (Greenberg et al., 1986; Pyszczynski et al., 2021). Students studying in terrorism-threatened environments are therefore likely to place greater value on services that provide reassurance, support, and a sense of safety. Administrative responsiveness, effective communication systems, counselling services, and visible security

arrangements may serve as important mechanisms through which universities reduce uncertainty and foster students' confidence in the institution.

Given the heightened importance of institutional support under conditions of insecurity, non-academic services are expected to contribute positively to students' overall satisfaction.

H1: Non-academic aspects positively influence student satisfaction in a terrorism-threatened higher education environment.

2.4.2 Academic Aspects and Student Satisfaction

Academic aspects represent the core educational functions of universities and include teaching quality, lecturer competence, curriculum delivery, assessment procedures, and learning support systems (Abdullah, 2005). These elements directly influence students' learning outcomes, academic development, and future employability. Consequently, academic quality has consistently been identified as one of the strongest predictors of student satisfaction in higher education literature (Bahadur, 2024; Bouranta et al., 2024).

Recent empirical studies reinforce this position. Bouranta et al. (2024) found that teaching effectiveness, curriculum relevance, and learning support significantly enhanced student satisfaction in European higher education institutions. Likewise, Ahmad and Wardhani (2023) reported that students who perceived high academic quality demonstrated greater satisfaction and stronger institutional commitment.

The positive influence of academic aspects is often explained by students' expectations regarding the value of their educational investment. When universities provide competent lecturers, relevant curricula, and effective learning experiences, students are more likely to perceive that their educational expectations have been fulfilled. This perception enhances satisfaction and strengthens students' commitment to the institution.

Although security concerns may influence students' priorities in conflict-affected environments, academic services remain central to the university experience. Students ultimately enrol in higher education institutions to acquire knowledge, skills, and qualifications that improve their future opportunities. Therefore, the provision of high-quality academic services is expected to enhance student satisfaction even within insecurity-prone environments.

H2: Academic aspects positively influence student satisfaction in a terrorism-threatened higher education environment.

2.4.3 Reputation and Student Satisfaction

Institutional reputation refers to the perceived prestige, credibility, reliability, and overall standing of a university among stakeholders (Abdullah, 2006). Reputation serves as an important signal of institutional quality and influences students' confidence in the value of their educational experience. Universities with strong reputations are often perceived as capable of delivering quality education, enhancing graduate employability, and maintaining institutional stability (Hasan & Hosen, 2022).

Recent studies provide additional support for this relationship. Lecap and Cortez (2023) found that institutional reputation significantly influenced students' satisfaction and loyalty across several universities in the Middle East. Similarly, Arrivabene et al. (2024) observed that

institutional image and reputation enhanced students' confidence in the long-term value of their educational qualifications.

The relationship between reputation and satisfaction is particularly relevant in environments characterized by uncertainty. TMT suggests that individuals exposed to existential threats seek reassurance from trusted institutions that provide stability and predictability (Pyszczynski et al., 2021). Within a terrorism-threatened environment, students may derive confidence from institutions perceived as resilient, reliable, and capable of maintaining educational continuity despite external challenges. Consequently, institutional reputation may function not only as an indicator of academic excellence but also as a source of psychological assurance.

Therefore, students who perceive their universities as reputable and resilient are likely to report higher levels of satisfaction.

H3: Institutional reputation positively influences student satisfaction in a terrorism-threatened higher education environment.

2.4.4 Access and Student Satisfaction

Access refers to the ease with which students can obtain educational resources, facilities, information, and institutional services (Abdullah, 2006). This dimension includes physical accessibility, availability of learning resources, digital infrastructure, communication systems, and responsiveness of university personnel. Access is essential because it enables students to engage effectively with both academic and administrative processes.

Recent studies demonstrate that access to educational resources and support services significantly enhances student satisfaction. Bouranta et al. (2024) found that access to digital learning platforms and academic resources positively influenced students' perceptions of institutional quality. Similarly, Bahadur et al. (2024) reported that students who experienced fewer barriers in accessing educational services expressed significantly higher levels of satisfaction.

In terrorism-threatened environments, access may become even more critical because students depend on reliable communication channels, emergency information systems, and uninterrupted educational resources. The ability of universities to maintain access to essential services despite security challenges may strengthen students' perceptions of institutional competence and reliability. Consequently, students who perceive higher levels of accessibility are expected to report greater satisfaction.

H4: Access positively influences student satisfaction in a terrorism-threatened higher education environment.

2.4.5 Programme Issues and Student Satisfaction

Programme issues refer to the quality, relevance, flexibility, and diversity of academic programmes offered by a university (Abdullah, 2005). This dimension reflects the extent to which academic programmes meet students' educational needs, career aspirations, and labour market expectations. Students are more likely to be satisfied when programmes are well-structured, professionally relevant, and responsive to changing societal and industry demands.

Recent studies support this argument. Ahmad and Wardhani (2023) found that programme relevance and curriculum flexibility significantly influenced student satisfaction and

perceived employability. Similarly, Bahadur (2024) reported that programme quality positively affected students' academic engagement and overall satisfaction with their universities.

The positive influence of programme issues on student satisfaction can be explained by the perceived value students derive from their educational programmes. When students believe that their programmes provide relevant knowledge and competencies, they are more likely to perceive their educational experiences positively. Programme flexibility also becomes important in environments where external disruptions may affect academic schedules and learning activities.

Within a terrorism-threatened environment, students may particularly value programmes that demonstrate adaptability and continuity in the face of uncertainty. Universities that successfully maintain programme quality and relevance despite security challenges are likely to enhance students' confidence in the institution and their future prospects. Consequently, programme issues are expected to contribute positively to student satisfaction.

H5: Programme issues positively influence student satisfaction in a terrorism-threatened higher education environment.

2.5 Theoretical Framework

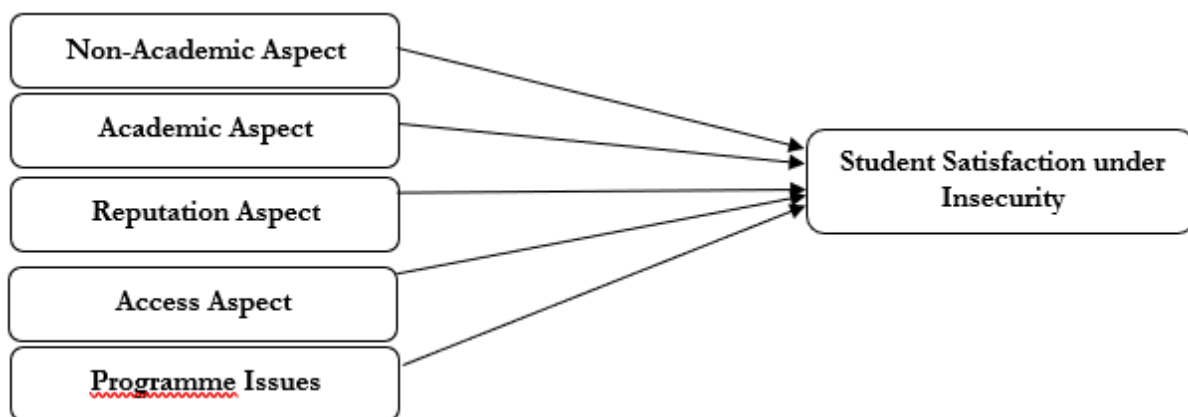


Figure 1. Conceptual Model

Source: Developed from literature (Abdullah, 2005; Ali et al., 2016)

The proposed hypotheses are grounded in the HEdPERF model, with TMT providing contextual insights into the terrorism-threatened environment. The framework posits that non-academic aspects, academic aspects, reputation, access, and programme issues directly influence student satisfaction, with the threat of terrorism potentially amplifying the importance of non-academic aspects and reputation. This framework guides the empirical investigation of terrorism-threatened environments, offering a novel perspective on service quality in a high-risk context.

3.0 Methodology

3.1 Study Context and Sample

The study was conducted among undergraduate students of Plateau State University, Bokkos and the University of Jos, located in Plateau State, North-Central Nigeria. The state has experienced recurrent security challenges, making the two institutions appropriate contexts for examining service quality and student satisfaction under conditions of insecurity.

A cross-sectional survey design was adopted. Data were collected during the first quarter of 2026 using a structured online questionnaire. The minimum sample size was determined using G*Power 3.1.9.7 with a medium effect size ($f^2 = 0.15$), significance level of 0.05, statistical power of 0.80, and five predictors, resulting in a minimum requirement of 88 respondents. To improve statistical precision and account for non-response, 600 questionnaires were distributed to randomly selected students.

A total of 510 responses were received, of which 488 were retained after data screening, yielding a valid response rate of 81.3%. The final sample substantially exceeded the minimum sample size requirement and was considered adequate for covariance-based structural equation modelling (CB-SEM).

3.2 Measures

Service quality was measured using the Higher Education Performance (HEdPERF) scale developed by Abdullah (2005), comprising five dimensions: non-academic aspects, academic aspects, reputation, access, and programme issues. Student satisfaction was measured using the scale developed by Ali et al. (2016). All items were assessed on a five-point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree"). Minor modifications were made to ensure contextual relevance to the study setting.

3.3 Model Specification

The study examined the influence of the five HEdPERF dimensions on student satisfaction. The structural model is specified as:

$$SAT = \beta_0 + \beta_1 NAA + \beta_2 ACA + \beta_3 REP + \beta_4 ACC + \beta_5 PRO + \varepsilon$$

where SAT represents student satisfaction; NAA, ACA, REP, ACC, and PRO represent non-academic aspects, academic aspects, reputation, access, and programme issues, respectively.

3.4 Data Analysis

Data were analysed using AMOS 23 through covariance-based structural equation modelling (CB-SEM). Following the two-step approach recommended by Anderson and Gerbing (1988), the measurement model was first evaluated using confirmatory factor analysis to establish reliability and validity. The structural model was subsequently assessed to test the hypothesised relationships.

Model fit was evaluated using established indices, including CMIN/DF, RMSEA, GFI, TLI, IFI, and RMR. Convergent validity was assessed using composite reliability (CR) and average variance extracted (AVE), while discriminant validity was evaluated using the Fornell-Larcker criterion. Multicollinearity was examined using variance inflation factors (VIF).

4.0 Results and Discussion

4.1 Results

Response Rate

A total of 600 questionnaires were distributed electronically to undergraduate students of Plateau State University, Bokokos and the University of Jos. Of these, 510 questionnaires were returned, representing an initial response rate of 85.0%. After data screening, 22 questionnaires were excluded due to incomplete responses and missing values.

Consequently, 488 questionnaires were retained for analysis, resulting in a valid response rate of 81.3%.

The valid response rate exceeds the minimum sample size of 88 respondents generated through G*Power analysis and is considered adequate for covariance-based structural equation modelling (CB-SEM). The relatively high response rate reduces the likelihood of non-response bias and enhances the credibility of the study findings.

Descriptive Statistics

A sample of 488 students from Plateau State University, Bokoos and University of Jos, participated in the study. Demographic characteristics, summarized in Table 1, reveal a gender distribution of 55.7% female (N=272) and 44.3% male (N=216). Age-wise, 80.3% (N=392) were 18–27 years, and 19.7% (N=96) were 28–37 years. Marital status showed 93.4% (N=456) single and 6.6% (N=32) married. Academic levels included 10.0% (N=49) in 100 Level, 15.2% (N=74) in 200 Level, 35.7% (N=174) in 300 Level, 37.7% (N=184) in 400 Level, and 1.4% (N=7) in 500 Level.

Table 1: Demographic Characteristics of Respondents (N=488)

Variable	Category	N	%
<i>Gender</i>			
Female	272		55.7
Male	216		44.3
<i>Age</i>			
18–27 Years	392		80.3
28–37 Years	96		19.7
<i>Marital Status</i>			
Single	456		93.4
Married	32		6.6
<i>Academic Level</i>			
100 Level	49		10.0
200 Level		74	15.2
300 Level		174	35.7
400 Level		184	37.7
500 Level		7	1.4

Source: Field Survey, 2026

Measurement Model

The measurement scales for the HEDPERF dimensions (non-academic aspects (NAA), academic aspects (ACA), reputation (REP), access (ACC), programme issues (PRO)) and student satisfaction (SAT) were evaluated using confirmatory factor analysis (CFA). As shown in Table 2, composite reliability (CR) values exceeded the recommended threshold of 0.70, while Cronbach's alpha coefficients ranged from 0.776 to 0.814, indicating satisfactory reliability and internal consistency (Hair et al., 2022). Similarly, all average variance extracted (AVE) values exceeded 0.50, confirming convergent validity (Fornell & Larcker, 1981).

A notable outcome of the CFA was the deletion of several measurement items due to low standardized factor loadings. Although item purification is a common procedure in SEM, the relatively high number of deleted items warrants explanation. The original HEDPERF instrument was developed and validated within relatively stable educational environments. In contrast, the present study was conducted in universities operating within a security-threatened environment characterized by periodic disruptions, security concerns,

infrastructural limitations, and uncertainty. These contextual realities may have altered students' evaluation criteria, thereby reducing the relevance of some traditional service quality indicators.

Furthermore, students in conflict-affected settings may place greater emphasis on institutional responsiveness, safety-related support, communication effectiveness, and continuity of services than on some conventional service quality dimensions emphasized in stable environments. Consequently, several items failed to load adequately on their respective constructs and were removed to improve construct validity and overall model fit. Importantly, the retained items demonstrated satisfactory psychometric properties and adequately represented the underlying constructs.

Table 2: Composite Reliability and Convergent Validity

Construct	Items	Loadings	AVE	CR	Alpha
NAA	naa4, naa5, naa6	0.75, 0.71, 0.73	0.563	0.774	0.790
ACA	aca1, aca2, aca3	0.73, 0.79, 0.73	0.534	0.794	0.788
REP	rep1, rep2, rep3	0.71, 0.72, 0.76	0.558	0.773	0.777
PRO	pro2, pro3, pro4	0.71, 0.73, 0.71	0.574	0.760	0.776
ACC	acc3, acc4, acc5	0.74, 0.75, 0.79	0.578	0.804	0.803
SAT	sat3, sat4, sat6, sat7	0.71, 0.76, 0.72, 0.75	0.541	0.825	0.814

Note: naa1, naa2, naa3, naa7, naa8, naa9; naa10, naa11, naa12, naa13; aca4, aca5, aca6, aca7, aca8, aca9; rep4, rep5, rep6, rep7, rep8, rep9; pro1; acc1, acc2, acc6; sat1, sat2, sat5, sat8 & sat9 were all deleted due to low factor loading

Discriminant Validity

Discriminant validity was assessed using the Fornell-Larcker criterion. As presented in Table 3, the square root of the AVE for each construct exceeded its correlations with other constructs, confirming satisfactory discriminant validity.

Table 3: Discriminant Validity

	ACA	NAA	REP	PRO	ACC	SAT
ACA	0.730					
NAA	0.557**	0.750				
REP	0.450**	0.340**	0.746			
PRO	0.414**	0.430**	0.394**	0.757		
ACC	0.415**	0.361**	0.368**	0.448**	0.760	
SAT	0.262**	0.490**	0.154**	0.137**	0.199**	0.735

** Correlation is significant at the 0.01 level (2-tailed). Diagonal values are square roots of AVE.

Multicollinearity diagnostics showed that tolerance values ranged from 0.582 to 0.727, while VIF values ranged from 1.375 to 1.718. These values fall within acceptable limits, indicating the absence of multicollinearity among the predictor variables.

Structural Model Fit

The structural model was evaluated using covariance-based structural equation modelling. The model demonstrated satisfactory fit to the observed data. Specifically, the fit indices yielded CMIN/DF = 3.027, RMR = 0.041, RMSEA = 0.065, GFI = 0.908, TLI = 0.908, and IFI = 0.926. These values satisfy the recommended thresholds for acceptable model fit (Hu & Bentler, 1999).

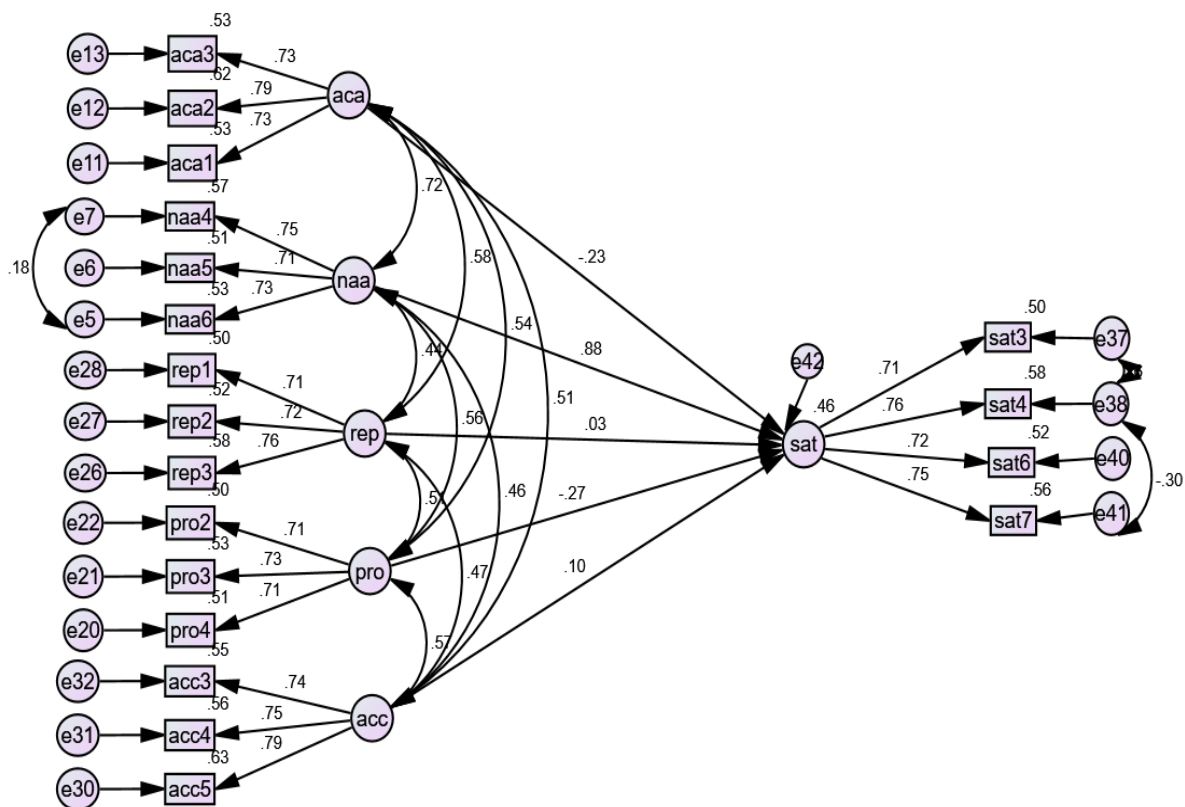


Figure 2: Structural Model

The structural model illustrates the relationships among the HEDPERF dimensions and student satisfaction.

The explanatory power of the model was assessed using the coefficient of determination (R^2). The results indicate that the five HEdPERF dimensions jointly explained 54% of the variance in student satisfaction ($R^2 = 0.54$). This suggests moderate-to-substantial explanatory power and demonstrates that service quality dimensions are important determinants of student satisfaction within the study context.

Hypotheses Testing

Five hypotheses were tested to examine the influence of HEdPERF dimensions on student satisfaction. The results are summarized in Table 4. The decision rule was to reject the null hypothesis if the p-value was less than 0.05, accepting the alternative hypothesis, and fail to reject the null hypothesis if the p-value was greater than 0.05.

Table 4: Results of Hypotheses

Hypotheses	Path	Regression Estimates	S.E.	C.R.	p-value	Tolerance	VIF
H1	SAT ← NAA	0.875	.120	7.126	.000	.635	1.576
H2	SAT ← ACA	-0.218	.105	-2.069	.039	.582	1.718
H3	SAT ← REP	0.027	.077	.353	.724	.727	1.375
H4	SAT ← ACC	0.100	.076	1.377	.168	.714	1.401
H5	SAT ← PRO	-0.273	.090	-3.018	.003	.676	1.478

The relationship between non-academic aspects and student satisfaction (H1) was strongly positive and statistically significant ($\beta = 0.875$, C.R. = 7.126, $p = 0.000$), supporting the hypothesis that non-academic aspects positively influence student satisfaction in terrorism-threatened environments. In contrast, academic aspects exhibited a negative and statistically significant relationship with satisfaction (H2; $\beta = -0.218$, C.R. = -2.069, $p = 0.039$), contrary to the hypothesized positive effect. This led to the rejection of H2, as the direction opposed expectations.

Institutional reputation (H3) showed a positive but non-significant relationship with satisfaction ($\beta = 0.027$, C.R. = 0.353, $p = 0.724$), failing to reject the null hypothesis, indicating no significant influence on student satisfaction. Similarly, access (H4) demonstrated a positive but non-significant effect ($\beta = 0.100$, C.R. = 1.377, $p = 0.168$), failing to reject the null hypothesis and suggesting that access does not significantly impact satisfaction. Programme issues (H5) revealed a negative and statistically significant relationship with satisfaction ($\beta = -0.273$, C.R. = -3.018, $p = 0.003$), rejecting H5 due to the unexpected negative direction, contrary to the hypothesized positive effect.

4.2 Discussion

This study examined the influence of service quality dimensions on student satisfaction in terrorism-threatened universities using the HEdPERF model. The findings reveal that service quality dimensions do not contribute equally to student satisfaction within conflict-affected higher education environments, suggesting that contextual realities significantly shape students' evaluations of institutional performance.

The findings indicate that non-academic aspects exert a strong positive influence on student satisfaction. This result is consistent with the findings of Fernandes et al. (2013), Owusu et al. (2023), and Bahadur, (2024), who reported that administrative responsiveness, student support services, and effective communication significantly enhance student satisfaction. In the context of Plateau State University and the University of Jos, students appear to place substantial value on administrative support systems, welfare services, communication

channels, and institutional responsiveness. Beyond the explanation offered by Terror Management Theory (TMT), the finding may also reflect the practical realities of studying in an environment characterized by periodic security concerns and uncertainty. Under such circumstances, students are likely to appreciate institutions that provide efficient support services capable of addressing both academic and non-academic challenges. Consequently, non-academic services function not only as quality indicators but also as mechanisms for promoting confidence, stability, and continuity within the university environment.

Contrary to expectations, academic aspects exhibited a significant negative relationship with student satisfaction. This finding differs from earlier studies conducted in relatively stable educational environments, where academic quality consistently emerged as a major determinant of satisfaction (Abdullah, 2006; Ali et al., 2020; Bahadur, 2024). The negative relationship may indicate dissatisfaction with teaching effectiveness, learning resources, classroom experiences, and academic support mechanisms. While TMT suggests that external threats can shift students' priorities away from traditional academic concerns toward immediate security and psychological needs, alternative explanations are equally plausible. In many Nigerian public universities, challenges such as lecturer shortages, overcrowded classrooms, inadequate instructional facilities, unstable academic calendars, and insufficient learning resources frequently affect students' academic experiences. These institutional constraints may have contributed to the negative perception of academic services observed in this study.

The study further found that institutional reputation had no significant effect on student satisfaction. This finding supports Sultan and Wong (2013), who argued that students tend to evaluate universities primarily based on their direct experiences rather than on symbolic indicators of prestige. The result suggests that students in terrorism-threatened environments may prioritize functional aspects of service delivery over institutional image. While reputation remains important for attracting prospective students, its influence on the satisfaction of currently enrolled students appears limited when compared with their day-to-day interactions with academic and administrative systems. In environments facing security challenges, tangible support and service effectiveness may outweigh perceptions of institutional prestige.

Similarly, access was found to have a positive but statistically insignificant influence on student satisfaction. This finding partially aligns with Duarte et al. (2012), who observed that access-related factors do not always translate into higher satisfaction when other environmental constraints are present. The result may indicate that students have adapted to existing access limitations and no longer perceive them as critical determinants of their overall university experience. Furthermore, security measures, movement restrictions, transportation difficulties, and infrastructural limitations may have normalized accessibility challenges, thereby reducing their influence on satisfaction judgments. Consequently, although access remains important, it appears less influential than support-oriented services within the current context.

Programme issues were found to have a significant negative influence on student satisfaction. This finding contrasts with Abdullah (2006) and several HEdPERF studies that reported positive relationships between programme quality and student satisfaction. The result suggests that students may be dissatisfied with programme delivery, curriculum implementation, scheduling flexibility, and the overall management of academic programmes. In conflict-affected environments, security disruptions often result in interrupted academic calendars, postponed examinations, shortened semesters, and delays in graduation timelines. Such disruptions may undermine students' confidence in the effectiveness and predictability of their academic programmes. In addition, resource

shortages and institutional operational challenges may limit the ability of universities to provide flexible and responsive programme structures. Consequently, programme-related issues may become sources of frustration rather than satisfaction.

Overall, the findings demonstrate that service quality perceptions within terrorism-threatened universities differ from those commonly reported in stable educational environments. While traditional HEdPERF studies generally identify academic quality, reputation, and programme issues as positive drivers of student satisfaction, the present study shows that students operating within security-challenged contexts place greater emphasis on immediate support services and institutional responsiveness. The findings therefore support the contextual relevance of Terror Management Theory by demonstrating how perceptions of risk and uncertainty may reshape students' service quality priorities. At the same time, the results highlight the importance of considering broader institutional factors, including infrastructure, resource availability, administrative effectiveness, and programme management, when explaining student satisfaction in higher education institutions operating under conditions of insecurity.

5.0 Conclusions

This study examined the influence of service quality dimensions on student satisfaction within terrorism-threatened universities using the HEdPERF model and Terror Management Theory (TMT). The findings reveal that non-academic aspects constitute the most important determinant of student satisfaction, while academic aspects and programme issues negatively influence satisfaction. In contrast, institutional reputation and access were found to have no significant effect on student satisfaction.

The study demonstrates that students in conflict-affected higher education environments evaluate service quality differently from students in relatively stable settings. Rather than focusing primarily on institutional prestige or accessibility, students place greater value on responsive administrative support, effective communication, welfare services, and institutional mechanisms that promote safety, stability, and continuity. The negative effects of academic aspects and programme issues further suggest that insecurity-related disruptions, resource constraints, and instability in academic delivery can undermine students' educational experiences and satisfaction.

From a policy perspective, the findings underscore the need for higher education policymakers and university administrators to recognize security and psychosocial support as integral components of educational quality in conflict-prone regions. Higher education policies designed for universities operating under conditions of insecurity should extend beyond traditional concerns of teaching quality and infrastructure to include student protection, psychological support, crisis preparedness, and institutional resilience. Consequently, service quality frameworks for universities in conflict zones should incorporate security-sensitive and student-support dimensions capable of addressing the unique challenges faced by students in such environments.

5.1 Implications

This study contributes to the higher education service quality literature by extending the applicability of the HEdPERF model to conflict-affected university environments. The findings demonstrate that the relative importance of service quality dimensions changes when students operate under conditions of insecurity and uncertainty. By integrating Terror Management Theory with HEdPERF, the study provides a novel theoretical explanation for

how perceptions of threat and vulnerability shape students' evaluation of university services. The negative effects of academic aspects and programme issues challenge conventional assumptions within service quality literature and suggest the need for future studies to incorporate contextual variables such as insecurity, institutional resilience, and psychological well-being into higher education service quality models.

The findings also provide important insights for university managers, government agencies, and higher education regulators responsible for institutions operating in conflict-prone environments. The results suggest that improving student satisfaction requires a holistic approach that combines academic quality with robust student support systems and institutional safety mechanisms.

Universities located in conflict-affected areas should strengthen student support structures, crisis management systems, and communication channels to ensure continuity of learning and student well-being. Policymakers should also integrate security preparedness and psychosocial support into quality assurance frameworks for higher education institutions operating in regions experiencing persistent insecurity.

Based on the findings of this study, the following recommendations are proposed:

1. Universities should establish and strengthen professionally staffed student counselling and psychological support centres to provide mental health services, trauma counselling, and stress-management programmes for students affected by insecurity and conflict-related experiences.
2. University management should deploy integrated security alert and emergency communication systems, including SMS alerts, mobile applications, dedicated emergency hotlines, and real-time notification platforms, to enhance students' sense of safety and improve emergency response capabilities.
3. Higher education institutions should establish campus safety and crisis-response units that work collaboratively with security agencies, local communities, and student representatives to monitor security risks and coordinate preventive measures.
4. Universities should adopt flexible academic delivery systems, including hybrid and online learning platforms, to minimize disruptions to teaching and learning during periods of heightened insecurity or emergency restrictions.
5. Academic programme administrators should improve programme scheduling, communication, and curriculum delivery mechanisms to reduce uncertainties arising from disrupted academic calendars, postponed examinations, and delayed graduation processes.
6. The National Universities Commission (NUC) and relevant higher education authorities should incorporate security preparedness, student welfare services, and psychosocial support indicators into institutional quality assurance and accreditation frameworks, particularly for universities operating in conflict-affected regions.

5.3 Limitations and Suggestions for Further Research

This study was conducted in two public universities located within the same conflict-affected state, which may limit the generalizability of the findings to other institutional and geographical contexts. In addition, the cross-sectional design restricts causal interpretation of the observed relationships.

Future studies should employ longitudinal research designs to examine how student satisfaction evolves as security conditions change over time. Comparative studies involving universities from both conflict-affected and non-conflict-affected regions would further enhance understanding of contextual differences in service quality perceptions. Future researchers may also investigate the moderating or mediating roles of institutional resilience, psychological well-being, perceived security, and student coping mechanisms in explaining student satisfaction within higher education environments affected by insecurity.

Acknowledgment Statement

This research was supported by the Tertiary Education Trust Fund (TETFund) under the Institutional Based Research (IBR) grant. We sincerely appreciate TETFund for providing the financial support that made this study possible. Their commitment to fostering academic research and innovation in Nigerian tertiary institutions is commendable.

REFERENCE

- Abdullah, F. (2005). HEDPERF versus SERVPERF: The quest for ideal measuring instrument of service quality in higher education sector. *Quality Assurance in Education*, 13(4), 305–328. <https://doi.org/10.1108/09684880510626593>
- Abdullah, F. (2006). Measuring service quality in higher education: HEDPERF versus SERVPERF. *Marketing Intelligence & Planning*, 24(1), 31–47. <https://doi.org/10.1108/02634500610641543>
- Abdulsalami, I. (2026, April 10). Insecurity leaves two UniJos students dead, two others, staff member injured. *The Guardian Nigeria*. <https://guardian.ng/news/nigeria/metro/insecurity-leaves-two-unijos-students-dead-two-others-staff-member-injured/>
- Ahmad, T. L., & Wardhani, S. A. (2023). Analysis of service quality measurement at vocational higher education with the Higher Education Performance Method (HEDPERF) and Importance Performance Analysis (IPA). *IJIEM - Indonesian Journal of Industrial Engineering and Management*, 4(2), 125–133.
- Ali, F., Zhou, Y., Hussain, K., Nair, P. K., & Ragavan, N. A. (2016). Does higher education service quality affect student satisfaction, image and loyalty? A study of international students in Malaysian public universities. *Quality Assurance in Education*, 24(1), 70–94. <https://doi.org/10.1108/QAE-02-2014-0008>
- Ali, S. R. O., Shariff, N. A. M., Said, N. S. M., & Mat, K. A. (2020). The effects of service quality dimensions on students' satisfaction: HEDPERF model adoption. *Jurnal Intelek*, 15(1), 1–12.
- Amnesty International Nigeria. (2023, December 28). Nigeria: Security lapses that enabled Plateau attack must be investigated. <https://www.amnesty.org.ng/2023/12/28/nigeria-security-lapses-that-enabled-plateau-attack-must-be-investigated/>
- Arrivabene, L. S., Vieira, P. R. da C., & Mattoso, C. L. de Q. (2019). Impact of service quality, satisfaction and corporate image on loyalty: A study of a publicly traded for-profit university. *Services Marketing Quarterly*, 40(3), 189–205. <https://doi.org/10.1080/15332969.2019.1630174>

- Aslam, S., Ahmed, N., Aslam, M., & Riaz, S. N. (2023). Comparative analysis of service quality instruments: Evidence from higher education sector of Pakistan. *Bulletin of Business and Economics*, 12(4), 1-12.
- Bahadur, G. C. S., Gurung, S. K., Poudel, R. L., Yadav, U. S., Bhattacharjee, A., & Bahadur, B. R. (2024). The effect of higher education service quality on satisfaction among business students in India and Nepal. *Cogent Education*, 11(1), Article 2393521. <https://doi.org/10.1080/2331186X.2024.2393521>
- Becker, E. (1973). *The denial of death*. Free Press.
- Bouranta, N., Psomas, E. L., & Kafetzopoulos, D. (2024). Integrating online learning into service quality assessment in higher education: Its influence on student satisfaction. *The TQM Journal*. Advance online publication. <https://doi.org/10.1108/TQM-01-2024-0035>
- Bryman, A. (2016). *Social research methods* (5th ed.). Oxford University Press.
- Byrne, B. M. (2010). *Structural equation modeling with AMOS: Basic concepts, applications, and programming* (2nd ed.). Routledge. <https://doi.org/10.4324/9780203805534>
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum Associates.
- Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). Sage Publications.
- Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16(3), 297-334. <https://doi.org/10.1007/BF02310555>
- De Jager, J., & Gbadamosi, G. (2010). Specific remedy for specific problem: Measuring service quality in South African higher education. *Higher Education*, 60(3), 251-267. <https://doi.org/10.1007/s10734-009-9298-6>
- Duarte, P. O., Raposo, M. B., & Alves, H. B. (2012). Using a satisfaction index to compare students' satisfaction during and after higher education service consumption. *Tertiary Education and Management*, 18(1), 17-40. <https://doi.org/10.1080/13583883.2011.609564>
- Elliott, K. M., & Healy, M. A. (2001). Key factors influencing student satisfaction related to recruitment and retention. *Journal of Marketing for Higher Education*, 10(4), 1-11. https://doi.org/10.1300/J050v10n04_01
- Elliott, K. M., & Shin, D. (2002). Student satisfaction: An alternative approach to assessing this important concept. *Journal of Higher Education Policy and Management*, 24(2), 197-209. <https://doi.org/10.1080/1360080022000013518>
- Fernandes, C., Ross, K., & Meraj, M. (2013). Understanding student satisfaction and loyalty in the UAE HE sector. *International Journal of Educational Management*, 27(6), 613-630. <https://doi.org/10.1108/IJEM-07-2012-0077>
- Field, A. (2018). *Discovering statistics using IBM SPSS statistics* (5th ed.). Sage Publications.

- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50. <https://doi.org/10.2307/3151312>
- Greenberg, J., Pyszczynski, T., & Solomon, S. (1986). The causes and consequences of a need for self-esteem: A terror management theory. In R. F. Baumeister (Ed.), *Public self and private self* (pp. 189–212). Springer. https://doi.org/10.1007/978-1-4613-9564-5_10
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2022). *Multivariate data analysis* (8th ed.). Cengage Learning.
- Hasan, M., & Hosen, Z. (2022). Influence of university service quality on student satisfaction and loyalty in Bangladesh. *The Journal of Quality in Education*, 12(19), 1–20.
- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6(1), 1–55. <https://doi.org/10.1080/10705519909540118>
- International Organization for Migration. (2024). Nigeria – Attacks flash report: Bokokos LGA, Plateau State (1 January 2024). *Displacement Tracking Matrix (DTM)*. <https://dtm.iom.int/reports/nigeria-attacks-flash-report-bokokos-lga-plateau-state-1-january-2024>
- Kim, J. H. (2019). Multicollinearity and misleading statistical results. *Korean Journal of Anesthesiology*, 72(6), 558–569. <https://doi.org/10.4097/kja.19087>
- Lacap, J. P. G., & Cortez, J. V. (2023). Does reputation lead to student loyalty? The case of a private higher education institution, a state university, and a local college. *The South East Asian Journal of Management*, 17(2), 177–203. <https://doi.org/10.21002/seam.v17i2.1343>
- Magasi, C., Mashenene, R. G., & Bulu, P. B. (2023). Perceived service quality and student satisfaction in higher learning institutions in Tanzania. *Humanities and Social Sciences Communications*, 10, Article 93. <https://doi.org/10.1057/s41599-023-01793-5>
- Nguyen, H. V., Vu, T. D., Saleem, M., & Yaseen, A. (2024). The influence of service quality on student satisfaction and student loyalty in Vietnam: The moderating role of the university image. *Journal of Trade Science*. Advance online publication.
- Nte, A. (2023). School security and safety challenges in Nigeria: Evaluating the existential threats of domestic terrorism in the North East region. *SEUNEUBOK LADA: Jurnal Ilmu-Ilmu Sejarah, Sosial, Budaya dan Kependidikan*, 5(1), 45–68.
- Owusu, E. K., Kyei-Blankson, L., & Ofori, C. G. (2023). Service quality affecting student satisfaction in higher education institutions in Ghana. *Journal of Marketing for Higher Education*. Advance online publication. <https://doi.org/10.1080/08841241.2023.2228032>
- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *Journal of Retailing*, 64(1), 12–40.
- Pyszczynski, T., Solomon, S., & Greenberg, J. (2004). In the wake of 9/11: The psychology of terror. *American Psychological Association*. <https://doi.org/10.1037/10459-000>

- Silva, D. S., Moraes, G. H. S. M. D., Makiya, I. K., & Cesar, F. I. G. (2017). Measurement of perceived service quality in higher education institutions: A review of HEdPERF scale use. *Journal of Education and Learning*, 6(2), 31–47. <https://doi.org/10.5539/jel.v6n2p31>
- Su, Y., Zhang, H., & Wang, L. (2024). Digital learning resources, service quality and student satisfaction in higher education. *Education and Information Technologies*, 29(2), 1851–1872.
- Sultan, P., & Wong, H. Y. (2013). Antecedents and consequences of service quality in a higher education context: A qualitative research approach. *Quality Assurance in Education*, 21(1), 70–95. <https://doi.org/10.1108/09684881311293070>
- United Nations Office of Counter-Terrorism. (2023). United Nations Office of Counter-Terrorism annual report 2023. United Nations. <https://digitallibrary.un.org/record/4063337>
- Uzuegbu-Wilson, E. (2019). The challenges of safe school in Nigeria: The role of security agencies. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3490000>
- Vail, K. E., Rothschild, Z. K., Weise, D. R., Solomon, S., Pyszczynski, T., & Greenberg, J. (2010). A terror management analysis of the psychological functions of religion. *Personality and Social Psychology Review*, 14(1), 84–94. <https://doi.org/10.1177/1088868309351165>
- Yildiz, S. M., & Kara, A. (2009). The PESPERF scale: An instrument for measuring service quality in the school of physical education. *Quality Assurance in Education*, 17(4), 393–415. <https://doi.org/10.1108/09684880910992359>
- Yusoff, M., McLeay, F., & Woodruffe-Burton, H. (2015). Dimensions driving business student satisfaction in higher education. *Quality Assurance in Education*, 23(1), 86–104. <https://doi.org/10.1108/QAE-06-2013-0026>.