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Key drivers of student satisfaction in public higher education institutions in Pahang, Malaysia

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ABSTRACT

In today's educational landscape, understanding key student satisfaction is essential for institutions striving to enhance educational quality and foster positive student experiences. The sustainability of public higher education institutions (PHEIs) depends heavily on students' enrolments. In an effort to attract and retain students, factors contributing to student satisfaction should be taken into consideration from each educational institutions to make the academic program are kept relevant throughout the time. This study aims to examine the factors influencing student satisfaction in PHEIs in Pahang, Malaysia. A quantitative survey was conducted among 120 students from various public universities in Pahang, Malaysia. Descriptive statistics, correlation, and multiple regression analysis were conducted using SPSS 26 to assess their perceptions of three key factors: quality of teaching and learning (QT), quality of facilities and infrastructure (QF), and quality of career and future opportunities (QC). The findings reveal that QT has a significant negative effect on student satisfaction (β=–0.468, $p<0.001$), while QC show a significant positive effect (β=0.327, p=0.015). In contrast, QF has no significant influence (β=0.125, p=0.301). Therefore, this study provides insights for educational policy makers to enhance student satisfaction strategy in PHEIs especially in focusing on career opportunities of students.

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1. INTRODUCTION

Globally, student satisfaction has become an important performance indicator for higher education systems. For example, the Australian government links part of its university funding to student experience and satisfaction ratings, positioning satisfaction as a key measure of institutional success. Despite reforms in Malaysian higher education, student satisfaction in non-urban states remains underexplored. This study addresses this gap by examining how teaching quality, facilities, and career services influence satisfaction in Pahang. Such complaints often emerge in non-urban areas, highlighting persistent service gaps related to administrative inefficiency, inconsistent teaching quality, and inadequate student support systems continue to surface [1]. As students today are viewed not only as learners but also as service recipients, their satisfaction must be assessed through a holistic lens that includes academic delivery, campus life, and institutional

responsiveness. This study seeks to identify the key factors that influence student satisfaction in public higher education institutions (PHEIs) across Pahang, offering insights that can help improve service quality and educational experiences.

Table 1 illustrates the number of graduates in Malaysia who were classified as being outside the labor force in 2022 and 2023 keep increasing. This category includes individuals who were not actively seeking employment, such as those pursuing further studies, engaged in domestic responsibilities, or not ready to enter the workforce that need to be discussed. In between 2022 and 2023, the figure rose slightly from 802.9 thousand to 820.2 thousand, reflecting a modest increase of 17.3 thousand. This trend may indicate a growing number of graduates choosing to delay workforce entry, possibly due to evolving career preferences, further education, or perceived job market challenges [2]. Thus, the PHEIs should further detect the lacking area within institution that contribute to this statistic.

Table 1. Number of graduates outside the labor force in Malaysia (2022–2023)

Year	Number of graduates outside labor force
2022	802.9
2023	820.2

Additionally, the 2023 data shows that most graduates in the labor force come from urban areas (91.3%), while only a small portion (8.7%) are from rural settings [2]. This clear gap suggests that students in rural areas may not be receiving the same level of support, exposure, or opportunities as those in cities. In places like Pahang, where many public universities are located in less urbanized areas, these differences matter [3]. This raises important questions about how the quality of services and learning environments vary across regions and how these differences might affect how satisfied students feel with their overall university experience. Graduates' labor force participation by strata in Malaysia is shown in Table 2.

Table 2. Graduates' labor force participation by strata in Malaysia (2023)

Strata	Percentage (%)
Urban	91.3
Rural	8.7

Notably, at international level, their educational institutional has taken an action putting student satisfaction to evaluate their operational success. For example, the Australian government established a funding system which provides financial support to universities based on their ability to deliver high-quality student experiences [4]. Whereby, the allocation of resources to higher education institutions in this country are depends heavily on student satisfaction ratings. Thus, the modern educational environment has uses student satisfaction as a primary performance metric for the institutions [4].

Following this observation, the physical elements of educational services including facility condition are strongly founds affected student satisfaction. This was being prove by research conducted by Kadri *et al*. [5] that students strongly assess their learning environments and facilities during their evaluation of service quality in educational institution as a primary factor to their satisfaction. This was supported by Rafati *et al*. [4] who confirms that high enrolment levels of students will create lower satisfaction to the facility services, which resulting in decreased educational quality perception among students. Therefore, these factors demonstrate how institutions show their dedication to improving facilities and services which directly influence student learning experiences.

Moreover, student satisfaction has been consistently linked to the educational support provided by institutions through academic advising and career services. According to Weerasinghe and Fernando [6], the adequacy of career services plays a significant role in shaping students' overall satisfaction, especially in terms of academic performances. This is because by having a clear picture of their career paths, students will feel more engaged in teaching and learning process. As supported by Paharia [7], who describes student satisfaction as a multi-dimensional concept, it is important for PHEIs to make a holistic development and guidance in creating a positive academic experience for students. Thus, improving the academic advising and career services is vital to ensure student satisfaction in PHEIs.

Lastly, the importance of teaching quality stands as an essential factor that cannot be ignored by the PHEIs. The quality of instruction directly relates to student engagement levels and their overall satisfaction. Next, previous research [8], [9] demonstrate that student satisfaction feedback serves as a strong instrument to enhance teaching approaches. Therefore, PHEIs in Pahang need to direct their efforts toward strengthening student satisfaction by focusing on three essential aspects which include teaching and learning methods,

physical learning environment conditions and career path to meet the expectations of student community. There is still limited evidence that specifically examines non-urban states such as Pahang, where unique geographical and socio-economic conditions may shape students' perceptions and expectations in distinctive ways.

2. LITERATURE REVIEW

2.1. Students' satisfaction in public higher education institutions

PHEIs refers to the pursuit of advanced studies and learning after completing secondary education by public sectors. Its primarily involves college or universities level that serve as centers for students to attain higher qualifications. Nowadays, higher education plays an essential role in shaping employment prospects. Apart from that, it is also crucial for the development of human capital and the enhancement of socioeconomic outcomes [10]. Recently, in Malaysia, many PHEIs are becoming aware of how students view the quality of their education, whereby, they not only want to gains academic achievement only that being portray in academic certifications. Yet, most of students also emphasis about the opportunity of employability after their graduates. Therefore, it is vital for these institutions to acknowledge the link between service quality that they provided and student satisfaction [11].

However, it is being understandable that student satisfaction is a complex construct influenced by various factors. Student satisfaction has become a key area of research in the increasingly competitive educational landscape due to its significant influence on institutional success and the recruitment of future students. This matter is deemed as an important not only to institutions but also to the students themselves [12]. There is different context of key to achieve student satisfaction in PHEIs including learning quality, career opportunities and facility quality. To be noted here that, this study is very important to be conducted because studies have shown that student satisfaction can influence students' performance s such as academic performance, retention rate, and motivation level [13].

In recent years, students' perception has become an issued not only in Malaysia but around the worlds. For example, India's National Assessment and Accreditation Council (NAAC) has introduced the student satisfaction survey (SSS) to better understand how students perceive the quality of education and services in their institutions. The insights gathered not only help institutions reflect on their strengths and gaps but also contribute to their overall accreditation standing [14]. Despite this, discussions on student satisfaction with educational quality often raise concerns about framing students as consumers, portraying the issues of student satisfaction are never ending [15]. In summary, PHEIs should concentrate on essential factors which affect student perceptions of quality and satisfaction to create an environment that supports student success.

2.2. Quality of teaching and learning (QT)

Recent studies have demonstrated that student-centered teaching approaches was significantly enhance the quality of education by fostering a more engaging and dynamic learning environment. According to Bergdahl *et al.* [16], these methods need go beyond traditional lecture formats by incorporating interactive elements that relate learning to real-life scenarios and career aspirations. This shift not only improves student engagement, but it's also motivating student to take an active role in their academic journey. Thereby, enhancing overall student satisfaction with their educational experiences. Additionally, the strategies implementation by using active learning, such as project-based learning and collaborative discussions, have been shown to contribute to higher cognitive and emotional engagement, ultimately leading to improved academic performance [17].

Apart from that, assessment plays a crucial role in shaping the learning experience, its serve not merely as a grading mechanism but also as an integral part of the educational process. Nowadays, students are feeling bored if the PHEIs using a traditional way of assessment such as reporting. Students look into effective assessment strategies, such as role play and debate that can significantly enhance student engagement and satisfaction. For instance, Ng and Yu [18] found that dialogic interactions during peer assessments foster active participation, which directly, influences students' performance and satisfaction levels. Lastly, as supported by Evans and Zhu [19] who developed the assessment engagement scale (AES), which provides insights into how students engage with assessment tasks, enabling timely interventions that can enhance their learning experiences.

2.3. Quality of facilities and infrastructure (QF)

Additionally, higher education institutions need to focus on developing physical and digital infrastructure because these elements directly affect student experiences and satisfaction levels. Students use facility conditions and resource availability including laboratory and library access to determine their

perception of educational quality [13]. Educational institutions that implement modern digital tools and learning spaces achieve better student engagement and satisfactions. This was supported by previous study [20] which shows that better facility quality, results in better student outcomes and higher satisfaction levels. Thus, such investments continue to be essential for developing an optimal learning environment.

Next, digital technologies together with virtual resources function is a fundamental element which enhance educational effectiveness and student satisfaction. As stated by Alenezi [21] who demonstrates that universities which implement new technological approaches provide students with better information access and improved educator-learner interactions, which results in higher student enrolment. This was in line with study by Rafiq *et al.* [22] who stated that educational institutions that provide adaptable learning options through online platforms and digital communication tools which accommodate different learning approaches enhance student satisfaction. Thus, the integration of digital facilities with infrastructure development allows institutions to fulfil present student requirements while preparing for future educational needs.

2.4. Quality of career and future opportunities (QC)

Moreover, understanding the alignment between education and career readiness is imperative for enhancing student satisfaction in higher education. Numerous studies highlight that student increasingly seek educational experiences that equip them with the skills and knowledge necessary for successful careers. As supported by James-Maceachern [23], who emphasize that students' expectations regarding career preparation significantly influence their overall satisfaction with their academic programs. Furthermore, institutions that prioritize experiential learning opportunities, such as internships and cooperative education programs, create pathways for students to connect theoretical knowledge with practical application [24]. This alignment increases students' perceptions of the value of their education and their preparedness for future employment, thereby enhancing satisfaction levels.

Lastly, career support services, including counselling, mentorship, and job placement assistance, are essential in meeting students' expectations for future opportunities. Sahito *et al*. [25] pointed out that effective career services not only guide students in making informed career choices, but also foster a sense of institutional loyalty and satisfaction. Institutions that actively engage with industry stakeholders to develop relevant curricula and provide career-oriented resources tend to see higher levels of student satisfaction and retention. Thus, by focusing on career readiness as a crucial aspect of their educational offerings, higher education institutions can significantly enhance the overall student experience and satisfaction [26]. The conceptual framework is illustrated in Figure 1.

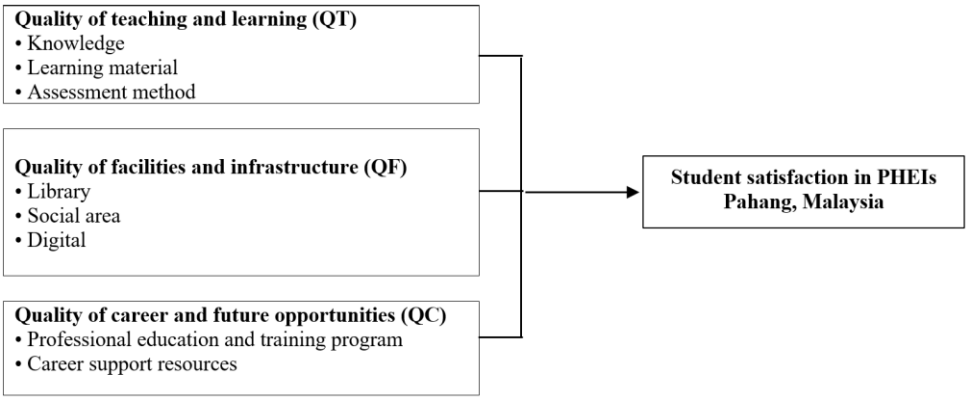

Figure 1. Conceptual framework

3. METHOD

This study implements quantitative methods to investigate student satisfaction at PHEIs in Kuantan, Pahang, Malaysia. This study was conducted in Kuantan, the state capital of Pahang, because it hosts the largest concentration of PHEIs in the region. The research respondents came from various public institutions in Kuantan. Stratified random sampling was employed to ensure that the sample reflected a diverse mix of students across different academic levels and educational backgrounds. The research was used G*Power analysis to determine the sample size which would produce reliable statistical outcomes [27]. Apart from that, the sample size for this study was determined by using G*Power 3.1 software, applying a statistical power level of 0.80, a significance level (α) of 0.05, and a medium effect size (r=0.30), which align with commonly accepted standards in social science research. From this analysis, it's indicated that a minimum of

84 respondents would be adequate to ensure statistical reliability. However, to strengthen the study's validity and allow for broader representation, a total of 120 respondents were selected as a sample. This approach ensured diversity across academic levels and educational backgrounds among students from PHEIs in Kuantan, Pahang, Malaysia.

Other than that, the data collection instrument consisted of a structured questionnaire. The questionnaire was be divided to four sections. First sections begin with dependent variables related to student satisfaction in PHEIs Pahang, Malaysia; second section related to quality of teaching and learning (QT); third section related to quality of facilities and infrastructure (QF); and lastly related to quality of career and future opportunities (QC). The research instrument was adapted from validated past studies and utilized a 5-point Likert scale ranging from "strongly disagree" to "strongly agree". The questionnaire was developed by deriving key constructs and items from the literature review on student satisfaction and service quality in higher education [6], [7], [11], [13]. For this study, a pilot study was conducted to assess the questionnaire's reliability and clarity, followed by validity and reliability testing. The statistical software to analyze data was conducted by using SPSS version 26.0. The analysis that has been run is descriptive statistics to summarize demographic data, other than that, inferential statistical methods, including correlation and multiple regression analysis, were used to examine relationships between variables and test the research hypotheses. This study adhered to standard research ethics procedures. Participation was voluntary, and all respondents were informed about the study's objectives and assured of the confidentiality and anonymity of their responses. Informed consent was obtained prior to data collection. Lastly, this methodological approach has provided an empirical insight into the key determinants of student satisfaction towards higher education institutions in Kuantan, Pahang, Malaysia.

4. RESULTS

This section focuses on analyzing the demographic profile of the respondents. Descriptive statistics are employed to transform raw data into meaningful information that characterizes various factors within the population. This involves organizing and summarizing the raw data collected [28]. As shown in Table 3, the respondents have been assembled into two categories of gender which is male and female. The percentage of respondent's gender of male is 48.3% and respondent's gender of female is 51.7%. The respondents also have been assembled into four categories of age, whereby, the higher respondent is from the age of 18-19 years old which is 44.2% and the lowest is from the respondent's age of 24 and above years old which is 6.7%. Furthermore, for the educational level, the higher respondents are from diploma level which indicates 55.0% and the lower respondents is from bachelor's degree which is 45.0%. Next, the percentage of respondents from institution B is higher 35.0%, followed by institution A 25.0%, and institution C and D demonstrate a similar percentage which is 20.0%. Lastly, for year of study, the higher respondents come from 1st year student which indicates; 45.0%, followed by respondents from 4th year students; 27.5%, 2nd year student; 15.8% and lastly 3rd year student; 11.7%.

Table 3. Respondent's profile

Variable	Respondent's profile	Frequency	Percentage (%)
Gender	Male	58	48.3
	Female	62	51.7
Age	18-19	53	44.2
	20-21	25	20.8
	22-23	34	28.3
	24 and above	8	6.7
Educational level	Diploma	66	55.0
	Bachelor's degree	54	45.0
Institutions	Institution A	30	25.0
	Institution B	42	35.0
	Institution C	24	20.0
	Institution D	24	20.0
Year of study	1st year	54	45.0
	2nd year	19	15.8
	3rd year	14	11.7
	4th year	33	27.5

Apart from that, Table 4 presents the descriptive statistics for the key variables in this study. Firstly, for QT, the mean scores range are from 3.85 to 4.08, indicating that respondents generally agreed with the statements regarding teaching quality. The highest mean score was observed for QT2 (M=4.08, SD=0.773),

suggesting strong agreement, while QT3 recorded the lowest mean (M=3.85, SD=0.857), indicating slightly lower perceived satisfaction. Secondly, for QF, mean scores ranged are from 3.76 to 3.89, suggesting moderate agreement among respondents. QF1 (M=3.89, SD=0.887) had the highest mean, reflecting a relatively positive perception of certain infrastructure aspects, whereas QF4 (M=3.76, SD=0.879) had the lowest, indicating potential concerns regarding specific facility-related factors. Thirdly, for quality of QC, the mean scores were relatively high, with QC2 (M=3.97, SD=0.716) receiving the highest rating, signifying that student placed strong importance on career-related opportunities. QC1 recorded a slightly lower mean (M=3.86, SD=0.770) but remained within the general agreement range. Overall, the findings indicate that students perceived teaching and learning quality as the most positively rated aspect, followed by career and future opportunities, while facilities and infrastructure received comparatively lower ratings. The standard deviations suggest a moderate level of variability in responses across all constructs.

Table 4. Descriptive statistic

Construct	Items	Mean	Standard deviation
QT	QT1	4.07	0.847
	QT2	4.08	0.773
	QT3	3.85	0.857
	QT4	4.05	0.829
QF	QF1	3.89	0.887
	QF2	3.88	0.945
	QF3	3.85	0.857
	QF4	3.76	0.879
	QF5	3.87	0.907
	QF6	3.82	0.926
QC	QC1	3.86	0.770
	QC2	3.97	0.716

Table 5 presents the skewness and kurtosis values for the study variables. The Skewness values range from -0.919 to -0.538, while kurtosis values range from 1.625 to 2.779, all within the acceptable range (-2 to +2 for Skewness, -7 to +7 for Kurtosis) [29]. These results indicate that the data is approximately normal, supporting the use of parametric tests such as correlation and regression analysis. Table 6 presents the Cronbach's alpha values for the study variables. The results indicate that QT (α=0.761) and QC (α=0.737) demonstrate acceptable reliability (α>0.70). However, QF (α=0.679) is slightly below the commonly accepted threshold, suggesting marginal reliability. Overall, the instrument is considered reliable for further analysis.

Table 7 presents the regression coefficients for the study variables. The results indicate that QT has a significant negative effect on student satisfaction (β=–0.468, 95% CI [–0.72, –0.21], p<0.001), suggesting that while teaching quality is recognized, factors such as workload or teaching methods may contribute to lower satisfaction levels. In contrast, QC has a significant positive impact (β=0.327, 95% CI [0.06, 0.59], p=0.015), indicating that career-related support plays a crucial role in student satisfaction. However, QF does not show a significant effect (β=0.125, 95% CI [–0.11, 0.36], p=0.301), suggesting that students may view infrastructure as a basic necessity rather than a determinant of satisfaction. Effect size analysis indicated that QT had a large effect, QC a medium effect, and QF a small/negligible effect on student satisfaction. These findings highlight the importance of career development services in enhancing student satisfaction, while also suggesting that improvements in teaching methods and workload management may be needed to address the negative association with satisfaction.

Table 5. Normality test

Construct	Skewness		Kurtosis	
	Statistic	Std. Error	Statistic	Std. Error
QT	-0.538	0.221	1.625	0.438
QF	-0.919	0.221	2.779	0.438
QC	-0.545	0.221	2.001	0.438

Table 6. Cronbach's alpha

Variables	No of items	Cronbach's alpha
QT	4	0.761
QF	6	0.679
QC	2	0.737

Table 7. Regression coefficients

Variable	Coefficients Std. error	Standardized coefficients beta	t	Sig.
Constant	0.176	-	21.761	<0.001
QT	0.060	-0.468	-3.407	<0.001
QF	0.053	0.125	1.039	0.301
QC	0.060	0.327	2.458	0.015

The results shown in Table 8 indicate that H1 is not supported, as QT has a significant negative effect on student satisfaction (B=-0.468, p<0.001). This suggests that while students acknowledge the quality of teaching, however, the factors such as high academic workload or ineffective engagement methods may contribute to dissatisfaction of students in teaching and learning process. Similarly, H2 is not supported, as QF does not have a significant effect on student satisfaction (B=0.125, p=0.301). This implies that students may perceive facilities as a basic requirement rather than a major factor influencing their satisfaction in educational services. Conversely, H3 is supported, as QC has a significant positive impact on student satisfaction (B=0.327, p=0.015). This finding highlights the importance of career development programs, job placement assistance, and industry linkages in shaping student satisfaction in educational services. Therefore, findings recommended that while QC found a significance factor contributing the student satisfaction, however, institutions still need to re-evaluate their teaching methods and workload management to in order to improve the student experience.

Table 8. Summary of the hypothesis testing results

No	Hypothesis	Results	Explanation
H1	There is a positive relationship between QT and student satisfaction	Not supported	Negative and significant relationship (β=-0.205, p<0.001). This means that higher teaching quality is associated with lower student satisfaction, this suggests that while students recognize the quality of teaching, factors such as workload or teaching methods may lead to dissatisfaction.
H2	There is a positive relationship between QF and student satisfaction	Not supported	Not significant relationship (p=0.301). This suggests that facilities and infrastructure do not have a significant impact on student satisfaction in this study's model.
H3	There is a positive relationship between QC and student satisfaction	Supported	Positive and significant relationship (β=0.146, p=0.015). This means that better career and future opportunities positively impact student satisfaction. Universities that provide strong career support services enhance student satisfaction.

5. DISCUSSION

5.1. Quality of teaching and learning

The findings of this study indicate there is a significant negative relationship between QT and student satisfaction (β=-0.468, p<0.001). This finding contradicts with conventional expectations that presume where the is a higher teaching quality, there is a higher student's satisfaction. A possible explanation that drawn this situation happen in PHEIs in Pahang, Malaysia is, while students acknowledge the quality of instruction, they may experience a high academic pressure and excessive workload leading to students feel dissatisfaction. This aligns with previous studies suggesting that, students value not only the content that being delivered by lecturer, but also the way it is taught, including interactive and student-centered approaches [30]. In addition, Onah *et al.* [31] also found that students reported lower satisfaction levels when teaching methods did not align with their learning preferences and expectations. Thus, this evidence supported that QT is significant factors contributing to student satisfaction.

To address this issue, it is crucial for the faculty to fostering a more interactive learning environment and assessment methods that may help mitigate stress levels and improve overall satisfaction of students. For instant, previous research made by Tadesse *et al.* [32] has shown that implementing problem-based learning and other interactive techniques can significantly boost student satisfaction by promoting deeper learning and active participation. Thus, future studies could further explore specific teaching and assessments factors that contribute to this negative relationship, such as the impact of workload assessment or class engagement in PHEIs. These findings align with the expectation–confirmation theory (ECT), which posits that satisfaction arises when actual learning experiences meet or exceed students' expectations; unmet expectations about workload or delivery can lead to dissatisfaction even when quality is perceived as high [33].

5.2. Quality of facilities and infrastructure

The findings of this study also reveal that QF does not have a significant effect on student satisfaction (β=0.125, p=0.301). This suggests that while students recognize the presence of facilities, they

may perceive them as a basic necessity rather than a determinant of overall satisfaction. Prior research supports the idea that students tend to focus more on academic and career-related factors rather than physical infrastructure when evaluating their university experience [34]. Weerasinghe and Fernando [6] highlight that while quality facilities can enhance the learning environment, it is still the teaching and learning quality that students take as prioritize, this indicating that infrastructure alone may not fulfil students' expectations of their educational experience.

Despite the non-significant result, maintaining and upgrading facilities remains essential for ensuring a conducive learning environment. PHEIs should shift their focus towards enhancing accessibility, modernizing technology-equipped spaces, and improving student service facilities to indirectly support satisfaction levels. In addition, Kalam and Hossain [11] suggest that while basic infrastructure is necessary, aspects such as library resources and digital learning spaces play a critical role in influencing student engagement and overall satisfaction. Thus, future studies could investigate whether specific aspects of infrastructure, such as online learning tools or recreational facilities, have a more direct impact on student engagement and retention, as improving these specific areas may lead to enhanced educational experiences for students.

5.3. Quality of career and future opportunities

Lastly, the results of this study demonstrate a significant positive relationship between QC and student satisfaction (β=0.327, p=0.015), reinforcing the importance of career development in higher education. This suggests that students place substantial value on job placement services, internship opportunities, and career guidance in deciding to enroll in PHEIs. These findings align with past research that emphasizing students seek institutions that actively support their transition into the job market such as through industry partnerships and employability training [4]. For instance, Nwakanma [35] highlights the critical role of career education in shaping student satisfaction in PHEIs, this showcasing how comprehensive career support services can significantly influence student satisfaction and employment readiness.

Therefore, to further strengthen student satisfaction, PHEIs should focus on expanding career support services, enhancing industry linkages, and increasing internship opportunities. As supported by Bawica [34], who assert that effective internship programs and career preparation activities are essential in building students' confidence in their future prospects. Thus, it is important for future study to explore how career support influences long-term graduate employability and alumni satisfaction, which further validate its critical role in enhancing the student experience.

6. CONCLUSION

This study investigated the elements that influence student satisfaction in PHEIs. The findings show that QC positively affects satisfaction, demonstrating that career-related support services directly shape students' overall experience. As a result, PHEIs should strengthen career development programs through stronger industry partnerships and expanded employability resources to enhance student satisfaction. Conversely, QT showed a negative relationship with satisfaction, indicating that heavy academic workload, assessment methods, and ineffective teaching practices may lead to dissatisfaction. Meanwhile, QF did not significantly influence satisfaction, suggesting that students perceive infrastructure as a basic requirement rather than a determinant of satisfaction. PHEIs should therefore review teaching strategies, assessment approaches, and workload distribution while continuing to modernize learning spaces and integrate technology-based resources to indirectly support academic success. Future research could include qualitative follow-ups to explore students' experiences in greater depth and comparative regional analyses to identify context-specific factors influencing satisfaction. In summary, by addressing these factors, PHEIs can create more student-centered learning environments, improve academic experiences, and support long-term educational outcomes.

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C : **C**onceptualization
M : **M**ethodology
So : **So**ftware
Va : **Va**lidation
Fo : **Fo**rmal analysis
I : **I**nvestigation
R : **R**esources
D : **D**ata Curation
O : Writing - **O**riginal Draft
E : Writing - Review & **E**diting
Vi : **Vi**sualization
Su : **Su**pervision
P : **P**roject administration
Fu : **Fu**nding acquisition

CONFLICT OF INTEREST STATEMENT

Authors state no conflict of interest.

INFORMED CONSENT

Informed consent was obtained from all subjects involved in the study.

DATA AVAILABILITY

The data that support the findings of this study are available from the corresponding author, [NB], upon reasonable request.

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