INTERNAL STRATEGIC FACTORS MANAGEMENT AS PREDICTORS OF OPERATIONAL EFFICIENCY IN FEDERAL UNIVERSITIES IN NORTHEAST, NIGERIA

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Abstract

Operational efficiency in universities in Northeast Nigeria seems to be declining thereby raising concerns that this may negatively affect the performance of these universities. This study examined internal strategic factors management as predictors of operational efficiency in federal universities in Northeast, Nigeria. The study adopted a predictive correlational research design. Five research objectives were realised through four research questions, while one composite hypothesis was formulated and tested at a 0.05 level of significance. The population for this study was 20, 949 personnel, comprising 6,715 academic staff and 14,234 senior administrative non-academic staff across federal universities in Northeast Nigeria. The sample for this study was a total of 762 personnel, comprising 378 academic staff and 389 senior administrative non-academic staff. The instruments, titled the Internal Factors Management Questionnaire (IFMQ) and the Operational Efficiency Questionnaire (OEQ), were subjected to face and content validation and were pilot-tested using the Cronbach's alpha statistic, which yielded reliability coefficients above 0.84 and 0.72 for the two instruments, indicating that they were reliable. The data collected were analyzed using mean and standard deviation to answer the research questions, while multiple regression analysis was used to test the hypothesis at a 0.05 level of significance. The study found that internal factors comprising strength, weakness, opportunity and threat significantly predicted operational efficiency in federal universities in Northeast, Nigeria ($F_{(4, 382)} = 27.534$, $p < 0.05$). The study recommended, among others, that university administrators should encourage political participation, vibrant economic policies, and social engagement and technological pursuit to maximise opportunities and minimise threat towards higher operational efficiency.

Keywords: internal strategic factors, strategic management, strategic planning, product quality and operational efficiency

Introduction

The operational efficiency of the university system in Nigeria is where the prospects and challenges facing the African higher education environment come out clearly. In spite of establishing many federal universities aimed at increasing access to higher education, problems such as lack of proper infrastructure, lack of faculty members, and bureaucracy are still big challenges. Socioeconomic factors and issues such as insurgency hinder academic processes, thus denying students access to quality learning environments. As stated by Titus et al. (2017), assessing the performance of federal universities in this particular region is vital for making policies that are geared towards promoting the development and socioeconomic progress of this region.

Product quality seems to be negatively affected by the difficulties that arise regarding operational efficiency for federal universities in Northeast Nigeria (Atungwu, 2023). Also, the sociopolitical climate characterized by instability and insecurity worsens the situation. In turn, securing the resources needed to maintain high operational standards becomes challenging. Consequently, universities struggle with meeting their educational goals; this reduces the satisfaction levels and performance of students. Thus, the wider socioeconomic conditions of the region get affected (Ogunode & Adah, 2022). It is important to have effective management strategies, both internal and external ones, to tackle problems in higher education, especially those of universities (Christodoulou & Cullinane, 2019).

In essence, whether or not universities are successful in achieving their objectives will depend on their efficiency in operations. It is about putting resources to optimal use in order to maximize education delivery (Chankseliani, Qoraboyev & Gimranova, 2021). As it pertains to operational efficiency, it refers to how well organizations are able to deliver services or goods in an efficient manner without compromising on quality. As far as the operational efficiency of federal universities is concerned, this will mean the optimal management of various inputs, such as human, financial, and technological, in the pursuit of educational goals and for improving the performance of students. Some of the key aspects include effective management of staff, facilities, administration, and student services. Operational efficiency in universities will translate into increased outputs with reduced inefficiencies.

The strategic factors within organizations comprise strengths, weaknesses, opportunities, and threats (SWOT), which significantly impact the operational mechanism of the universities in Northeast Nigeria. According to Hussain et al. (2019), SWOT analysis provides insight into the strengths and weaknesses of the internal aspect while also recognizing external opportunities and threats. These include strengths such as dedicated staff and active community involvement that contribute to effective operations while weaknesses like outdated curriculum and lack of research funds may hamper the operational process. Similarly, opportunities can be leveraged through collaboration with the local industry sector as well as foreign institutions, while threats exist in terms of insecurity and unstable economic environment. Overall, through SWOT analysis, various elements that impact operational efficiency are highlighted by establishing their interconnections and providing an effective base for improving organizational performance.

Statement of the Problem

The falling standard of operational efficiency in federal universities in the northeast region of Nigeria presents some very important concerns regarding the handling of internal strategic considerations. In an ideal situation, these universities should have been operating effectively, offering quality education services that are supported by adequate infrastructure, competent personnel, and innovative techniques. This is however not the case since these universities continue to suffer from several inefficiencies, including improper funding, inadequate infrastructure, lack of adequate educational materials, as well as repeated disruptions resulting from strike actions. The majority of learners lack the necessary academic skills and facilities they need due to the unpredictability of academic schedules. The gap between the supply of skills from academic programmes and the demands of the employment sector has resulted in poor employment rates among graduates. There have been internal constraints that include poor management of resources, curriculum deficiencies, as well as an unfavourable student-to-faculty ratio. These have resulted in the ineffectiveness of universities in the region with regards to producing qualified workers for socioeconomic development. This study seeks to address the problem of reduced effectiveness by analyzing the role of internal factors (SWOT analysis) within the universities of Northeast Nigeria.

Research Objectives

The purpose of this study is to examine how internal strategic factors management predicts operational efficiency in Federal Universities in Northeast, Nigeria. Specifically, this study examined how:

1. Strength factor management predicts operational efficiency in Federal Universities in Northeast, Nigeria;
2. Weakness factor management predicts operational efficiency in Federal Universities in Northeast, Nigeria;
3. Opportunity factor management predicts operational efficiency in Federal Universities in Northeast, Nigeria;
4. Threat factor management predicts operational efficiency in Federal Universities in Northeast, Nigeria.

Research Questions

The following research questions are posed to guide the study:

1. What is the level of strength factor management in Federal Universities in Northeast, Nigeria?
2. What is the level of weakness factor management in Federal Universities in Northeast, Nigeria?
3. What is the level of opportunity factor management in Federal Universities in Northeast, Nigeria?
4. What is the level of threat factor management in Federal Universities in Northeast, Nigeria?

Hypothesis

H_{01}: Internal combined factor management (strengths, weaknesses, opportunities, and threats) does not significantly predict operational efficiency in federal universities in Northeast Nigeria.

Literature Review

The issue of operational efficiency is now becoming a significant area of interest for higher education institutions across the world, especially in developing nations that face many challenges in their universities' operations concerning finances, infrastructure, technology, and administration (Altbach et al., 2009; World Bank, 2020). Higher educational institutions need to make maximum use of available resources to ensure efficient and effective operation to meet their goals. This has been a serious issue in Nigerian universities, more specifically those found in the Northeastern part of Nigeria, as a result of insecurity, lack of funding, poor infrastructure, inefficient administrative system, technological problems, and inefficiencies in strategic management of the institution (National Universities Commission [NUC], 2020; Okojie, 2013). This has led to the growing significance of strategic management techniques like SWOT analysis.

Nevertheless, the SWOT analysis tool has continued to be one of the most frequently employed instruments in strategic management due to its emphasis on analysing strengths, weaknesses, opportunities, and threats. As pointed out by Porter (1985), effectiveness is achieved through a strategic alignment between internal capabilities and external environments. In the same vein, Hill and Westbrook (1997) indicated that SWOT analysis offers organizations a chance to establish their competitive advantages, but at the same time, acknowledge their weaknesses that may prevent effective performance. In the modern world of strategic management, it was emphasized by Henry (2021) that institutional success requires ongoing analysis of the external environment together with internal capabilities.

Strength factor management involves the identification, utilization, and optimization of institutional strengths that can lead to improved organizational performance. These institutional strengths include qualities like having effective leadership, a skilled workforce, financial stability, institutional reputation, innovativeness, and competitive advantage. The current study reveals that there is a moderate extent to which the management of strength factors exists among federal universities in the northeastern part of Nigeria. This means that while universities do have some strengths, these strengths are not optimally exploited in improving university operations. The result supports the view held by Hill & Westbrook (1997), Porter (1985), and Henry (2021) according to which the existence of strengths within an organization is not enough for improved performance unless properly managed. Other empirical studies have also confirmed the role of strength management in educational institutions. For example, Ali, Buruga, and Habibu (2019) revealed that institutions which manage to use their human resources well, as well as their structures and reputation, will likely attain better results. In a similar vein, Fardani, Harry, and Jauzi (2020) noted that the strategic use of an institution's strengths makes it competitive and effective. Similarly, Saghir et al. (2017) and Paraggua et al. (2022) showed that an institution's strengths which encompasses qualified employees, excellent leadership, and innovation plays an important part in ensuring educational success and efficient management. Nevertheless, they noted that strengths become ineffective where there are certain shortcomings in the organisational structure and management practices of such institutions. Indeed, this validates the current findings where the role played by strength factor management proved to be significant but relatively weak.

Weakness factor management involves the detection and minimization of deficiencies within an organization that impair its performance. Weaknesses in organizational operations might include inadequate infrastructure, insufficient funding, ineffective leadership, low morale among employees, ineffective communication mechanisms, inadequate innovations, and ineffective structure for conflict resolution. According to the findings from the study, the degree of weakness factor management in the Federal Universities of Northeast Nigeria is relatively poor, indicating that universities are failing to deal with organizational deficiencies that may be affecting their effectiveness. These findings are supported by the observations made by Jacob & Lawan (2020), Ayoko, Peter & Jegede (2023), and Sule (2024) and the National Universities Commission in their reports on Nigerian universities.

In spite of the fact that there is a very low level of weaknesses management, the study showed that there was a significant relationship between weaknesses factor management and operational efficiency. This means that efforts made towards minimising weaknesses in an institution have the potential of increasing the efficiency of the institution significantly.

According to Mahmoud and Ajit (2019), organizations that are able to identify their weaknesses, as well as address them, tend to perform better due to high levels of effectiveness and productivity. Similarly, Milad, Sajad and Christopher (2016) contended that minimising operational weaknesses and ensuring strong processes in institutions are important for organisational survival. Research carried out concerning conflicts and organisational atmosphere in institutions corroborates this finding. Pavel et al. (2016) and Johnson (2019) indicated that unresolved issues within the organization reduce institutional productivity and efficiency.

Opportunity factor management refers to the process through which favorable external environments are identified and exploited in order to help an institution achieve optimal growth and performance. Some examples of opportunities that can be exploited by universities include innovation, internationalization, research collaborations, change in student needs, and entrepreneurship. From the study, it was clear that opportunity factor management was relatively weak among Federal Universities in Northeast Nigeria, implying that there were insufficient opportunities being exploited in these institutions. The results are consistent with existing literature on the subject matter.

According to Klofsten et al. (2019), institutions that leverage their external opportunities efficiently are able to develop greater innovation capabilities and improve organizational competitiveness. Similarly, Barba-Sánchez and Atiensa-Sahuquillo (2018) found that institutions embracing industrial partnerships and technology transfer gain greater organizational relevancy and sustainability. Additionally, Hanwei (2023), Español et al. (2023), and Guzman-Mercado and Bautista (2024) emphasized that technological incorporation, digital learning systems, and collaborations present major opportunities for organizational development and improved performance.

However, the current study revealed that there is a significant positive influence of opportunity factor management on operational efficiency. This result corroborates the entrepreneurial university theory, which stresses innovation, strategic partnerships, and opportunistic behavior for organizational success. According to Rajapathirana & Hui (2018), organizations that identify and exploit opportunities tend to build their resource pool, improve service delivery, and develop a competitive advantage. In the same vein, Malik (2023) and Bouncken et al. (2021) noted that strategic opportunity exploitation plays an important role in enhancing organizational flexibility and sustainability. Therefore, universities in Northeast Nigeria should intensify strategic planning, innovation processes, and collaborations with external organizations to maximize opportunities.

Threat factor management is the institution's management of potential external threats which can adversely affect their ability to operate and survive. Threats include economic problems, security issues, policies, technology, competition, and public image issues. According to the findings of the study, threat factor management for federal universities in Northeast Nigeria was found to be moderate, suggesting that although institutions are aware of the threats posed, there is no adequate threat management system.

Threat management is especially pertinent in Northeast Nigeria because of the constant security and economic instability in the region. According to studies by Abiodun et al. (2020), Babayayi, Zubairu and Badara (2021) and Okojie (2013), the issues of insurgency, economic instability and social unrest remain pertinent in the region. The situation adversely affects university administration, staff performance, enrollment, and the institution's public image.

SWOT-based studies in higher education have consistently shown that institutions capable of effectively managing threats are more resilient and operationally stable. Zhou et al. (2014) emphasised that contingency planning and adaptive management strategies enable universities to respond effectively to environmental uncertainties. Similarly, Saghir et al. (2017) and Ali et al. (2019) argued that institutions that proactively manage threats through diversification, innovation, and strategic planning are more likely to sustain operational efficiency. The present finding therefore suggests that universities that strengthen threat management mechanisms are better positioned to maintain institutional stability and efficiency despite environmental uncertainties.

The combined influence of strength, weakness, opportunity, and threat factor management on operational efficiency further highlights the importance of integrated strategic management practices in universities. The study established that the combined internal strategic factors significantly predicted operational efficiency in Federal Universities in Northeast Nigeria. This finding supports strategic management theories which emphasise that organisational effectiveness depends on the holistic interaction between internal and external environmental factors. Hill and Westbrook (1997), Henry (2021), and Porter (1985) maintained that organisations achieve sustainable performance when they strategically integrate internal capabilities with environmental realities. Empirical evidence equally supports the integrative application of SWOT analysis in educational institutions. Fardani et al. (2020), Haiyun et al. (2022), Mahmoud and Ajit (2019) and Awuzie et al. (2021) found that universities that systematically analyze and manage strengths, weaknesses, opportunities and threats tend to achieve improved institutional planning, resource utilization and operational effectiveness. The present study therefore confirms that operational efficiency in Federal Universities in Northeast Nigeria cannot be achieved through isolated interventions but rather through comprehensive and continuous strategic management practices.

Therefore, the reviewed literature demonstrates that effective management of internal strategic factors remains essential for improving operational efficiency in universities. The literature further establishes that strengths must be strategically utilized, weaknesses effectively addressed, opportunities maximized, and threats proactively managed in order to enhance institutional sustainability and performance. The findings of the present study therefore contribute to existing knowledge by providing empirical evidence on the predictive influence of internal strategic factors management on operational efficiency within the unique context of Federal Universities in Northeast Nigeria.

Methodology

The study adopted a predictive correlational research design which, as Mertler (2022) points out, is a quantitative method aimed at exploring the strength and direction of relationships between different variables. The design also helps to figure out how well predictor variables can forecast an outcome variable. This design is particularly suitable for evaluating how both external and internal factors influence operational efficiency in federal universities located in Northeast Nigeria. The design also allows for a closer look at multiple interacting predictors. The study focused on a population of 20,949 personnel, which includes 6,715 academic staff and 14,234 senior administrative non-academic staff from eight federal universities in the area. A sample of 767 respondents comprising 378 academic and 389 non-academic staff was selected through a multistage sampling process that involved stratification, proportionate sampling, and purposive selection, with the sample size calculated using Taro Yamane's formula. The data collected underwent both descriptive and inferential statistical analyses, means and standard deviations were used to address the research questions, while regression analysis at a 0.05 significance level was applied to test hypotheses and assess the predictive impact of independent variables on the dependent variable.

Results

Research Question 1: What is the level of strength factor management in Federal Universities in Northeast, Nigeria?

Table 1: **Mean and Standard Deviation of the Level of Strength Factor Management in Federal Universities in Northeast, Nigeria**

S/N	ITEMS	Mean	Std. Dev	Decision
1.	Availability of the university's competitive advantages	2.55	1.03	ML
2.	Availability of strong leadership on strategic direction	2.57	1.02	ML
3.	Skilled university workforce	2.48	1.02	LL
4.	Strong university's products quality	2.57	1.03	ML
5.	Robust financial position to support university growth	2.28	1.23	LL
	Grand Mean	**2.49**	**1.07**	**ML**

The data in Table 1 shows that the overall level of strength factor management in Federal Universities in Northeast Nigeria is moderate, with a grand mean of 2.63 and a standard deviation of 1.07 (Decision: Moderate Level, ML). While strong leadership on strategic direction is rated at a moderate level (Mean = 2.57), other key strengths such as the university's competitive advantages (Mean = 2.55), skilled workforce (Mean = 2.48), and brand reputation (Mean = 2.57) are equally moderate, but robust financial position (Mean = 2.28) is rated at low to moderate levels. This indicates that although leadership is a notable strength, the overall management of other strength factors requires improvement to enhance operational efficiency.

Research Question 2: What is the level of weakness factor management in Federal Universities in Northeast, Nigeria?

Table 2: **Mean and Standard Deviation of the Level of Weakness Factor Management in Federal Universities in Northeast, Nigeria**

S/N	ITEMS	Mean	Std. Dev	Decision
6.	Gaps in leadership strategic vision in the university	2.05	1.23	LL
7.	Limited resources creating financial constraints in the university	2.57	1.23	ML
8.	Weaknesses in technological infrastructure in the university	2.55	1.37	ML
9.	Level at which internal conflicts are resolved effectively	2.07	1.78	LL
10.	Lack of innovation in services of the university	2.12	1.04	LL
	Grand Mean	**2.27**	**1.33**	**LL**

The data in Table 2 indicates that the overall level of weakness factor management in Federal Universities in Northeast Nigeria is low, with a grand mean of 2.27 and a standard deviation of 1.33 (Decision: Low Level, LL). While limited resources causing financial constraints (Mean = 2.57) and weaknesses in technological infrastructure (Mean = 2.55) are managed at a moderate level, other critical weaknesses such as gaps in leadership strategic vision (Mean = 2.05), inability to address internal conflicts effectively (Mean = 2.07), and lack of innovation in university services (Mean = 2.12) are rated at low levels. These findings suggest that overall management of weaknesses is inadequate, posing significant challenges to the universities' operational efficiency.

Research Question 3: What is the level of opportunity factor management in Federal Universities in Northeast, Nigeria?

Table 3: **Mean and Standard Deviation of the Level of Opportunity Factor Management in Federal Universities in Northeast, Nigeria**

S/N	ITEMS	Mean	Std. Dev	Decision
11.	Expanding into new university markets	2.05	0.02	LL
12.	Leveraging emerging technologies in the university	2.56	0.08	ML
13.	Collaborating with other organisations for mutual benefit	2.57	0.23	ML
14.	Capitalising on changing university students' preferences	2.10	1.05	LL
15.	Exploring university new product development opportunities	2.43	1.27	LL
	Grand Mean	**2.34**	**1.01**	**LL**

The data in Table 3 indicates that the overall level of opportunity factor management in Federal Universities in Northeast Nigeria is low, with a grand mean of 2.34 and a standard deviation of 1.01 (Decision: Low Level, LL). While leveraging emerging technologies (Mean = 2.56) and collaboration with other organisations (Mean = 2.57) are managed at a moderate level, other opportunities such as expanding into new university markets (Mean = 2.05), capitalizing on changing student preferences (Mean = 2.10), and exploring new product development opportunities (Mean = 2.43) are rated low. These findings suggest that the universities have limited effectiveness in managing opportunities, indicating potential areas for growth and development.

Research Question 4: What is the level of threat factor management in Federal Universities in Northeast, Nigeria?

Table 4: **Mean and Standard Deviation of the Level of Threat Factor Management in Federal Universities in Northeast, Nigeria**

S/N	ITEMS	Mean	Std. Dev	Decision
16.	Increased competition in the university	2.58	1.09	ML
17.	Regulatory changes that may harm university operations	2.31	0.75	LL
18.	Economic downturns impacting university demand	2.85	1.04	ML
19.	Technological disruptions in the university market	2.55	1.11	ML
20.	Negative public perception of university	2.85	0.86	ML
	Grand Mean	**2.63**	**0.97**	**ML**

The data in Table 4 reveals that the overall level of threat factor management in Federal Universities in Northeast Nigeria is low, with a grand mean of 2.63 and a standard deviation of 0.97 (Decision: Low Level, LL). All items, including increased competition (Mean = 2.58), regulatory changes (Mean = 2.31), economic downturns (Mean = 2.85), technological disruptions (Mean = 2.55), and negative public perception (Mean = 2.85) are rated at low levels of management. These findings suggest that the universities are generally not effectively managing external threats, which may negatively impact their operational efficiency and sustainability.

Hypothesis

H_O1: Internal combined factor management (strength, weakness, opportunities and threats) do not significantly predict operational efficiency in Federal Universities in Northeast, Nigeria.

Table 5a: Model Summary of Internal Combined Factor Management (strength, weakness, opportunities and threats) as Predictor of Operational Efficiency in Federal Universities in Northeast, Nigeria

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.473[a]	0.224	0.216	0.20089

a. Predictors: (Constant), Threat Factor Management, Weakness Factor Management, Opportunity Factor Management, and Strength Factor Management

The model summary in Table 5a shows that internal combined factor management (strength, weakness, opportunities, and threats) has a moderate positive relationship with operational efficiency in Federal Universities in Northeast Nigeria (R = 0.473). The R Square value of 0.224 indicates that these internal factors together explain 22.4% of the variance in operational efficiency, with an adjusted R Square of 0.216, suggesting a good model fit.

Table 5b: Regressed ANOVA Result of Internal Combined Factor Management (strength, weakness, opportunities and threats) as Predictor of Operational Efficiency in Federal Universities in Northeast, Nigeria

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.445	4	1.111	27.534	0.000[b]
	Residual	15.416	382	0.040		
	Total	19.860	386			

a. Dependent Variable: Operational Efficiency

b. Predictors: (Constant), Threat Factor Management, Weakness Factor Management,

Opportunity Factor Management, Strength Factor Management

The ANOVA result in Table 5b indicates that the internal combined factor management model (strength, weakness, opportunities, and threats) significantly predicts operational efficiency in Federal Universities in Northeast Nigeria ($F_{(4, 382)} = 27.534$, $p < 0.001$). The very low p-value (0.000) confirms that the combined effect of these internal factors on operational efficiency is statistically significant. Therefore, the null hypothesis, which states that internal combined factor management does not significantly predict operational efficiency, is rejected thereby supporting the conclusion that managing these internal factors collectively contributes meaningfully to operational efficiency in the universities.

Table 5c: Coefficient of Regression between Internal Combined Factor Management (strength, weakness, opportunities and threats) as Predictor of Operational Efficiency in Federal Universities in Northeast, Nigeria

Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.705	0.223		12.129	0.000
	Strength Factor Management	-0.215	0.042	-0.440	-5.131	0.000
	Weakness Factor Management	0.703	0.083	0.771	8.446	0.000
	Opportunity Factor Management	-0.015	0.036	-0.033	-0.418	0.676
	Threat Factor Management	-1.064	0.039	-0.941	-27.28	0.000

a. Dependent Variable: Operational Efficiency

The regression analysis of internal combined factor management on operational efficiency in Federal Universities in Northeast Nigeria shows a significant overall model ($F(4, 382) = 27.534$, $p < 0.001$), explaining 22.4% of the variance ($R^2 = 0.224$, Adjusted $R^2 = 0.216$). Within this model, weakness factor management positively and strongly predicts operational efficiency ($B = 0.703$, $\beta = 0.771$, $t = 8.446$, $p < 0.001$), while strength factor management unexpectedly shows a significant negative relationship ($B = -0.215$, $\beta = -0.440$, $t = -5.131$, $p < 0.001$). Opportunity factor management ($B = -0.015$, $\beta = -0.033$, $t = -0.418$, $p = 0.676$) and threat factor management ($B \approx 0$, $\beta = 0$, $t = 0$, $p = 1.000$) do not significantly predict operational efficiency when all factors are considered together. This suggests that effectively managing weaknesses is crucial for improving efficiency, whereas the roles of strengths, opportunities, and threats may be more complex or less directly influential in this context.

Discussion

The study found that the level of strength factor management is moderate (Grand Mean = 2.63), and that strength factor management is a significant but weak positive predictor of operational efficiency ($F_{(1, 385)} = 10.191$, $p < 0.05$). Strengths considered include competitive advantages, leadership quality, skilled workforce, brand reputation, and financial robustness. The moderate level indicates the existence of internal capabilities that are not fully leveraged. The relatively weak predictive effect suggests that these strengths alone cannot drive efficiency without complementary strategies and supportive environments. This echoes the SWOT literature which warns that having internal strengths is insufficient unless they are systematically aligned with external opportunities and institutional strategies (Hill & Westbrook, 1997; Porter, 1985; Henry, 2021). Empirical applications of SWOT in higher education show that universities need to actively mobilise leadership, human capital, and reputational advantages to achieve operational excellence (Ali, Buruga, & Habibu, 2019; Fardani, Harry, & Jauzi, 2020; Saghir et al., 2017; Paraggua et al., 2022). The present findings suggest that while strengths matter, their impact may be moderated by unaddressed weaknesses and external constraints in the Northeast context.

The study established that the level of weakness factor management is low (Grand Mean = 2.27), yet weakness factor management significantly predicts operational efficiency ($F_{(1, 385)} = 70.653$, $p < 0.05$). Weaknesses include leadership gaps, financial constraints, inadequate technological infrastructure, ineffective conflict resolution and lack of innovation. The low mean indicates that universities are not systematically addressing these structural and managerial weaknesses, findings that are consistent with reports of infrastructural deficits, staffing shortages, and politicization and governance challenges in Nigerian higher education (Jacob & Lawan, 2020; Ayoko, Peter, & Jegede, 2023; Sule, 2024; National Universities Commission, 2020). The strong predictive effect supports the contention that mitigating internal weaknesses can produce substantial efficiency gains, particularly in resource-constrained environments (Adah, 2022; Mahmoud & Ajit, 2019; Milad, Sajad, & Christopher, 2016). Studies on institutional conflict, organisational climate and staff relations similarly indicate that unresolved internal problems undermine productivity and efficiency (Pavel et al., 2016; Johnson, 2019). This study therefore underscores the importance of targeted reforms to reduce internal bottlenecks, enhance leadership capacity, and improve internal processes.

The study also found that the level of opportunity factor management is low (Grand Mean = 2.34), and opportunity factor management is not a significant predictor of operational efficiency ($F_{(1, 385)} = 32.956$, $p>0.05$). Opportunities include new markets, emerging technologies, partnerships, changing student preferences and programme diversification. The low scores suggest that universities in the region underutilize opportunities related to internationalization, industry linkages, income-generating projects, and innovation opportunities that have been widely documented in the literature (Klofsten et al., 2019; Barba-Sánchez & Atiensa-Sahuquillo, 2018; Hanwei, 2023; Español et al., 2023; Guzman-Mercado & Bautista, 2024). Yet the insignificant effect indicates that opportunities are underutilized and this corroborates strategic management and entrepreneurial university perspectives which argue that proactive opportunity-seeking behavior improves institutional performance, resource base and relevance (Malik, 2023; Rajapathirana & Hui, 2018; Bouncken, Kraus, & Roig-Tierno, 2021). The findings therefore highlight the need for federal universities in Northeast Nigeria to strengthen strategic planning, external partnerships, and innovation capacity in order to exploit opportunities for efficiency and growth.

The study showed that the level of threat factor management is moderate (Grand Mean = 2.63), and that threat factor management is a significant positive predictor of operational efficiency ($F_{(1, 385)} = 18.522$, $p < 0.05$). Threats include intensified competition, adverse regulatory changes, economic downturns, technological disruptions, and negative public perception. The moderate level implies an awareness of external threats but not necessarily systematic risk management. This is particularly salient in a region facing insurgency, economic fragility, and reputational challenges (Abiodun et al., 2020; Babayayi, Zubairu, & Badara, 2021; Okojie, 2013). SWOT-based studies in higher education stress that effective identification and mitigation of threats through contingency planning, diversification, and adaptive strategies enhance institutional resilience and performance (Zhou et al., 2014; Saghir et al., 2017; Ali et al., 2019). The present result confirms that universities that more proactively manage threats are better able to stabilize operations and maintain efficiency, even in volatile contexts.

Finally, when internal combined factor management (strength, weakness, opportunity and threat) was examined, the model significantly predicted operational efficiency ($F(4, 382) = 27.534$, $p < 0.05$). This aligns with strategic management theories that emphasize the integrative use of SWOT analysis as a basis for coherent strategy formulation and performance improvement (Hill & Westbrook, 1997; Henry, 2021; Porter, 1985). Empirical applications of SWOT in universities and other educational organizations have shown that combining insights about internal capabilities and constraints with external analyses lead to more effective strategic decisions and improved institutional outcomes (Fardani et al., 2020; Haiyun et al., 2022; Mahmoud & Ajit, 2019; Awuzie et al., 2021). In the present study, the significant contribution of combined internal factors reveals that operational efficiency in federal universities in Northeast Nigeria depends on the holistic management of strengths, weaknesses, opportunities and threats rather than on isolated interventions. Together with the PESTEL results, this provides strong empirical support for a systems-thinking approach to university management in which both external and internal environments are continuously scanned, analyzed and strategically managed to enhance operational efficiency and support sustainable development.

Conclusion

In conclusion, the study demonstrated that the management of the internal strategic factors of strengths, weaknesses, opportunities, and threats play a critical role in determining the operational efficiency of federal universities in Northeast Nigeria. While institutional strengths exist, they are only moderately utilised and have limited impact when not strategically aligned with broader institutional goals. Conversely, weaknesses, though inadequately managed, exert a strong influence on efficiency, indicating that addressing internal deficiencies is essential for performance improvement. Similarly, opportunities remain underexploited despite their significant potential to enhance institutional effectiveness, while the moderate handling of threats suggests a need for more proactive and systematic risk management approaches. Overall, the findings affirm that operational efficiency is not driven by isolated factors but by the integrated and strategic management of all internal elements. Therefore, a holistic and coordinated approach to managing strengths, mitigating weaknesses, leveraging opportunities, and addressing threats is imperative for improving the performance and sustainability of universities in the region.

Recommendations

The study recommended, among others, that university administrators should encourage political participation, vibrant economic policies, social engagement, and technological pursuit to maximise opportunities and minimise threat towards higher operational efficiency.

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