



Effect of Environmental Analysis on the Performance of Public Universities in Nairobi City County, Kenya

Teresia N. Nyoike^{a++*} and Hannah Orwa Bula^{a#}

^a School of Business Economics and Tourism, Strategic Management - Kenyatta University, Nairobi, Kenya.

Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

Article Information

DOI: 10.9734/AJEBA/2023/v23i221154

Open Peer Review History:

This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: <https://www.sdiarticle5.com/review-history/109048>

Original Research Article

Received: 27/08/2023

Accepted: 03/11/2023

Published: 06/11/2023

ABSTRACT

The closing of 11 local campuses of two Kenyan public universities has substantially affected their performance and viability. Even though empirical literature has shown that environmental analysis affects performance in various circumstances, most research contains scope limitations, conceptual gaps, methodological gaps, and contextual gaps. As a result, there is a paucity of empirical evidence regarding the effect of environmental analysis on performance of Kenyan public universities, a research gap that the current study filled. The primary goal of the study was to assess effects of environmental analysis on performance in Kenyan public universities. The study was underpinned on theory of performance and strategic fit theory. The study, which used a descriptive study approach, had the 168 top administration managers of Kenyan public universities in Nairobi City County as its target group from which 119 respondents were obtained the Yamane formula. The study used stratified proportionate sampling to choose participants from each university who were then identified using systematic sampling. The data was gathered from

⁺⁺ MBA Candidate;

[#] Senior Lecturer;

*Corresponding author: E-mail: nyoiketesh98@gmail.com;

primary sources through a questionnaire, which was pre-tested for validity using content analysis and reliability to yield a Cronbach' Alpha value of 0.881 to indicate a reliable tool. Descriptive statistics were obtained from quantitative analysis and while inferential analysis was used to generate correlation and regression statistics. The study found that at 5% significance level, environmental analysis has a significant and positive effect on performance of public universities in Nairobi City County ($p < 0.047$; $r = 0.185$; $\beta = 0.155$). The study recommends for public universities in Nairobi City County to ensure that their policies should always enhance their staff to effectively apply the basic environmental analysis tools; Balanced Scorecard framework Strengths, Weaknesses, Opportunities, and Threats Analysis, Political, Economic, Social, Technical, Legal and Environment model in their environmental analyses.

Keywords: Balanced Scorecard framework; environmental analysis; performance of public universities.

1. INTRODUCTION

In the contemporary era, governments have prioritised university education as a catalyst for socioeconomic development [1]. This demand has resulted in the fast expansion of colleges, creating trained and competent personnel [2]. Accordingly, many governments have sought to provide excellent university education while ensuring educational relevance through the 'massification' of higher education [1]. Notably, these universities use performance to compare their actual outcomes to their intended goals [3]. According to Bhatti et al. (2013), firms should construct performance indicators to manage their performance effectively. Usually, profitability and revenue growth are financial performance metrics, whereas service quality and customer happiness are non-financial measures [4]. However, Jama [5] proposed measures of non-financial performance to include matters like organizational development, performance improvement, governance, enhanced efficiency in reaching the goal, steadily increasing line manager adherence, shared vision, the fit between internal and outside capabilities, and forethought as to how decisions will affect the future. In a previous study, Sosiawani et al. [6] measured financial performance in various ways, including profit growth, fair value, and organizational growth, as factors employed to measure financial performance. Cost, economic, quality, duration, flexibility, reliability of delivery, safety, customer experience, employee engagement, and social performance were used by Bhatti et al. (2013) as performance indicators. In this study, the measures adopted for organizational performance include students' enrolment, adequacy of resources, quality of resources, and efficiency of the training process.

1.1 Performance of Public Universities

The performance of Kenyan universities' has registered poor output as compared to the other universities in the regionally and globally. Performance ranking is based on web visibility, furthermore annually, only a few universities appear in the top ranks in the regional rankings [7]. Most Kenyan universities have agonized and still suffer low academic performance, loss of finances, demotivated staff, and staff transfers in pursuit of greener pastures and loss of students culminating in loss of public confidence [8].

Performance in institutions of higher learning is significant in the contribution towards development of knowledge and skills vital for the growth of economies; effective performance of academic staff displayed through quality teaching, research and publication is of great importance to stakeholders within institutions of higher learning [9]. In their effort to improve their performance, public universities are turning into environmental analysis, which helps them organise their resources in a manner that allows them to interact with the specified targets and produce enhanced performance [10]. Environmental analysis has long been acknowledged as an essential management tool for high-performing firms. It entails gathering performance-related data from the organization's internal, industrial, and external environments [11].

Management theorists have created various models to help management teams guide their businesses through challenging times. Companies must research potential clients to learn about their preferences and qualities [12]. In the case of higher education institutions, management teams must determine the target market's career interests. Establishing the link

between environmental contextual elements and public university performance in Kenya necessitates thoroughly examining the institutions' operations over time.

One of the most prevalent environmental evaluation models is the SWOT (Strengths, Weaknesses, Opportunities, and Threats) model and others include the use of PESTLE (Political, Economic, Social, Technical, Legal, and Environmental) and Balanced Scorecard (BSC) framework [13,14]. Management teams can successfully choose the tactics to use to attain their firm's goal by knowing the dynamics and features of their environment (Koumparoulis, 2013).

1.2 Statement of the Problem

Even though the Kenyan government and close stakeholders are seeking to enhance university education to improve adequacy of resources, quality of resources, the efficiency and the training process, public education entities performance has been degrading, as seen by diminishing university education quality (Munene 2016). Statistics show that 96% of public universities in Kenya are experiencing deteriorating performance [15]. Kenya's public universities have always had trouble achieving the performance standards for education set by the (CUE) Commission for University Education [16]. The decline in the performance of public universities has substantially affected their expansion and viability, as proven by the closure of 11 local campuses of two public universities by the CUE following a comprehensive examination of their performance (CUE, 2016). The low performance is associated with; difficulties in financial resources, inadequate facilities, shortage of suitably prepared academic personnel to deliver well-designed academic programs, and weak governance [17,18] (Munene, 2016). Accordingly, public university stakeholders are placing unprecedented pressure on these institutions to improve their deteriorating performance levels, [19]. Empirical research has associated environmental analysis with performance where Yu et al. [20] explored the role of environmental analysis on organisational performance using supply chain integration and supply chain responsiveness. However, most of the empirical research works suffer from scope restrictions [21], conceptual gaps [22,23] while other had methodological gaps [24] and the rest were associated with contextual gaps [11,20,25,26,27]. This indicates

that the effects of environmental analysis on the performance of public universities in Kenya has not yet been adequately demonstrated empirically, a research gap the present study filled.

1.3 Research Objective

To fulfil the research aim, the following specific goals acted as a guide for the study

- To determine the effects of environmental analysis on the performance of selected public universities in Nairobi City County, Kenya.

1.4 Research Question

The study answered the following question: -

- What are the effects of environmental analysis on the performance of selected public universities in Nairobi City County, Kenya?

2. THEORETICAL REVIEW

The supporting theories for this study included the theory of performance (ToP) and strategic fit theory.

2.1 Theory of Performance

The main authors of the Theory of Performance (ToP) connected it to the central idea that is used to explain and boost performance [28]. Thus, ToP is founded on producing valued results (performing) by an individual or a group of people who collaborate guided by an objective or goals, in which case, the development of performance exercise and level of performance are focused on the performer's capability to achieve extraordinary accomplishments [29]. So far, it seems that attaining the best possible performance requires putting the performer in an ideal psychological response (the performer's mindset), placing the performer in productive terms, and having the performer engage in reflective practice [30] (Caine et al., 2005). As a result, the ToP is beneficial in revealing environmental analysis as the cornerstone for enhancing organizational performance. The university would ensure that it would observe and assess present performance levels, mark accomplishments and improvements, and analyze and create identity while attempting to enhance performance levels through monitoring

planning systems. In light of this, this theory will help explain how public universities in Nairobi City County, Kenya, have performed. As a result, the theory considers how public universities in Nairobi City County, Kenya perform (dependent variable) from environmental analysis perspectives. So, the ToP is vital for explaining organisational performance as the DV in the current analysis.

2.2 Strategic Fit Theory

Strategic Fit Theory asserts that it is important to ensure the corporate overall planning procedures are suitable for its conditions, such as the surrounding environment [31]. So, a firm should continuously develop management processes based on the context and state of the firm [32]. According to Barney and Delwyn [33], implementing the strategic fit concept assists organizations in utilizing their resources more efficiently, enabling them to minimize operating costs while effectively countering new prospects through organizational performance. Based on the strategic fit theory, effectively responding to environmental challenges and new possibilities through environmental analysis enhances performance [33]. Thus, this theory was helpful to the current study in identifying resource planning and environmental analysis as strong indicators of strategic planning when assessing strategic planning as a determinant of Kenyan public universities. Strategic Fit Theory was helpful in assessing objectives two and three.

2.3 Empirical Review

Extensive investigations have been conducted on the effect of environmental analysis on performance where Okwemba and Njuguna [11] employed a descriptive approach to examine environmental scanning and Chemelil Sugar Company's performance and found environmental scanning to have positively significant effect on performance. The study suffered from contextual gaps because it was conducted at the Chemelil sugar plant in Kisumu County, limiting its application to sugar-producing firms. In their study, Nkemchor and Ezeanolue [21] examined the existing body of literature to evaluate the influence of strategic management on the operational effectiveness of organizations in Delta State, Nigeria. The study revealed that conducting environmental scanning had a noteworthy positive effect on the performance of the organization. Nkemchor and Ezeanolue [21] concentrated on the organizational performance

of tertiary institutions, which in Kenya face different challenges than public universities. These limitations on the scope of the research lead the researcher to conduct the current study to assess the effects of environmental analysis on Kenyan public universities.

In their investigation of the effects of supply chain responsiveness and integration on operational performance, Yu et al. [20] used structural equation modelling to analyse survey data gathered from Chinese manufacturing firms. The findings show that performance is considerably influenced favourably by environmental analysis. Unlike public universities, Yu et al. [20] used information from Chinese manufacturing firms in their research. So, generalisation of the results to public universities is difficult. Accordingly, the present study assessed the effects of environmental analysis on Kenyan public universities.

Asser et al. [22] carried out a cross-sectional survey study to assess the influence of dynamic environmental scanning techniques on the performance of commercially-oriented government parastatals in Kenya. The researchers used standard F and t-tests to examine the hypotheses after building regression models. The investigation revealed that the scanning techniques have a substantial beneficial effect on performance. Asser et al. [22] employed a type of environmental analysis called dynamic environmental scan, which revealed contextual gaps. However, the present study used environmental analysis and its effect on Kenyan public universities.

Lotayif [25] investigated the relationship between performance and scanning among UAE executives. To look into the relationships between variables, MRA, correlation, and univariate analysis were used. Performance and scanning showed significant correlations. The Middle East served as the study's context, which may limit the findings' applicability to other regions. The current study, however, evaluated the effect of environmental analysis on the performance of Kenyan public universities hence helped in filling a contextual gap.

Nyamai [24] conducted an environmental scanning analysis to enhance how the Kenyan judiciary delivers services. Qualitative information for the study was gathered through in-depth interviews. Environmental scanning significantly affected how justice is administered, which

positively effected service delivery. Nyamai [24], on the other hand, only interviewed a few people in this study, which raised methodological concerns and a methodological gap. These methodological issues were addressed by obtaining data from different categories of people from Kenyan public universities.

Al-Hawary and Al-Hamwan [23] examined how environmental analysis affected the competitiveness of commercial banks in Jordan using a statistical analytical method. According to their findings, environmental analysis has a statistically significant effect on the banks' capability to compete. Al-Hawary and Al-Hamwan [23] focused on the effect of environmental analysis on the competitive capabilities of Jordanian Commercial Banks in their research, which was distinct from the current investigation into the effects of environmental analysis on university performance.

A descriptive survey was carried out by Issack and Muathe [26] to look into environmental analysis and performance in public health facilities in Mandera County, Kenya. Environmental scanning and performance were found to be positively correlated, and inferential statistics were generated using correlation and regression analysis. In other words, conducting an environmental audit is essential to ensuring the sustainability of business growth. The study may not be an accurate indicator of academic success at a university, though, because it focused on a medical facility. But this investigation assessed how environmental analysis has an effect on the performance of Kenyan public universities.

Mang'ana, Rotich, Hassan, and Orwa [27] carried out research using a cross-sectional survey research methodology to determine the effect of environmental scanning on the viability of Matatu Savings and Credit Cooperatives in Kenya. To analyse quantitative data, multiple regressions, factor analysis, ANOVA, and Chi-square were employed. In order to review qualitative data critically and develop discussion themes, content analysis was used to further the study's objective. Environmental scanning and Matatu Sacco's performance were found to be positively correlated. Mang'ana et al. [27], on the other hand, focused on Matatu Savings and Credit Cooperatives, which confront distinct obstacles from public universities. However, this

study assessed the effects of environmental analysis on Kenyan public universities.

3. METHODOLOGY

3.1 Research Design

The research used descriptive research because it outlined the variables of interest and provided detailed insights into the study topic [34]. Additionally, it was applied to define, calculate, forecast, and research contextual associations. This assisted in addressing concerns about who will take part in the study, what will be done, when the study was to be finished, where it was, why it was done, and how the study was to be carried out.

3.2 Population and Sample

In research, the set of units from which a sample is drawn is known as a population (Bougie & Serekan, 2015). The target population was the 56 Heads of Departments of the University of Nairobi; UON [35], 87 Heads of Departments of Kenyatta University [36], 25 Technical University of Kenya Departmental Heads [37] in Kenya.

Yamane's [38] formula was used for calculating sample size, as shown below.

$$n = \frac{N}{1+N(e^2)}$$

Where, e is the precision level (0.05) that is, 5% precision at a 95% confidence level; n is the sample size, while N is the target population size.

$$\text{Thus } n = \frac{168}{1+168 \times (0.05)^2} = \frac{168}{1+168 \times (0.025)} = \frac{168}{1+4.2} = \frac{168}{5.2} = 32.31 \approx 32$$

Hence, 119 respondents were the sample size for the research. The research used proportionate sampling to determine the sample size per classification. The study used systematic sampling to select participants from each category using sample frames. The population of each categorization was divided by the sample size for that classification, which was then used to create a sampling interval (n) for each classification in the study. The research selected each element as a study participant, starting with one and continuing until the required sample size was reached for that categorization. The

participants were referred to as respondents once they had been selected.

3.3 Research Instrument

This study used primary to gather research information. A set of questionnaires having close ended questions was used to collect these data. Essentially, structured questions gave respondents the greatest latitude in their responses while still enabling them to respond consistently to the same questions. The researcher administered questionnaires to participants throughout the data-collecting process, providing guidance and explanation on completing the forms. The researcher helped participants complete the questionnaires to speed up the process. Structured questionnaires were utilized to gather the study's data from the participants. The questionnaire was designed using 5-point Likert Scale.

3.4 Validity and Reliability

The research instrument's validity was evaluated in this study using its content validity where the research supervisor and a strategic planning specialist, both professionals in this area, were enlisted by the researcher to assist. The reviewers of the instrument then made comments on the predictive value and applicability of the questions. The tool thereafter underwent modifications, additions, and exclusions. The Cronbach's alpha (α) coefficient was 0.978, an indication of highly reliable tool in that the reliability coefficient was approaching 1 while threshold is 0.7 [39].

4. RESULTS AND DISCUSSION

The study analysed data and provided descriptive statistics using a quantitative approach [40]. When evaluating descriptive statistics, the data patterns were evaluated using the mean, and standard deviation and presents using frequency tables

4.1 Response and Demographics

In this research, the principal investigator administered 119 questionnaires, of which 85 were completed and returned. This indicates a response rate of 71.43%. Consistent with Mugenda and Mugenda [41], a response rate of

greater than 69% is adequate for data analysis. Thus, the response rate of 71.43% was deemed satisfactory to conduct a robust analysis.

As majority of the participants 53(61.18%), were aged between 41 and 50 years; 17(20.00%) were aged between 31 and 40 years; 7(8.24%) were aged between 51 and 60 years; and 9(10.59%) were aged over 60 years. Clearly, all the participants were either in the upper middle or the peak of their careers and were therefore conversant with the aspects of strategic management and performance in their institutions. All the 85 participants (100.00%) showed that they possessed doctoral (PhD) qualifications. This suggests that they were all highly qualified to provide information on the associations between strategic management practices and performance in their universities. Lastly, most of the respondents, 39(45.88%), had been in their departments for periods ranging between 6 and 10 years; 22(25.88%) had been in their departments for between 11 and 15 years; 14(16.47%) had been in their departments for less than five (5) years; and 10(11.76%) indicated that they had been there for over 15 years. Overall, majority of the respondents (83%) had been in their departments for over 6 years, attesting to their familiarity with their institutions' strategic management practices.

4.2 Descriptive Analysis

The data was collected on a 5-point Likert Scale; 1 = strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = strongly agree. The study obtained Mean (M) and standard deviation (SD) for each indicator of the IVs or the DV and also obtained the aggregate M and SD. Since these statistics are continuous, the study transformed the results into continuous form using mean of means and the scales moderated such that; 1 to 1.8 = strongly disagree, above 1.8 to 2.6 = Disagree, above 2.6 to 3.4 = Neutral, above 3.4 to 4.2 = Agree, above 4.2 to 5 = strongly agree. The descriptive statistics of these results and the associated interpretation are captured hereunder.

The objective of the research was to determine the effects of environmental analysis on the performance of selected public universities in Nairobi City County, Kenya. The results are presented in Table 1.

Table 1. Environmental analysis and performance

Statement	M	SD
Environmental analysis (internal and external) always enhances the organisational performance of the university	4.00	0.76
Environmental analysis is done regularly at the university	4.08	0.90
The university has created a set of KPIs to monitor the accomplishment of its strategic initiatives.	3.84	0.88
SWOT analysis is always employed when dealing with significant issues.	3.42	1.20
The university periodically evaluates its internal ecosystem to identify its shortcomings and strengths, utilizing the SWOT analysis technique.	3.52	0.87
Universities consistently use balanced scorecards (BSC) to discover and enhance their internal operations and support their external achievements.	3.60	1.12
PESTLE is always used to identify critical external factors that may affect the university	3.74	0.97
The institution routinely assesses its external environment to identify its issues and constraints.	3.51	0.86
Aggregate	3.71	0.94

Source: Research data (2023)

These results show that the respondents agreed to the assertion that environmental analysis (internal and external) always enhanced the organisational performance of the university (M=4.00; SD=0.76). The present study concurs with earlier studies including Yu et al. [20]; Lotayif [25]; Al-Hawary & Al-Hamwan, [23]; and Okwemba & Njuguna [11] which demonstrated a positive link between environmental analysis and the performance of various institutions that were studied. The present study also established that environmental analysis was done regularly at the university (M=4.08; SD=0.90), a practice that was found to be common in other organizations including tertiary institutions in Kenya [21]; and Chemelil Sugar Company [11]. Conducting environmental analysis on a regular basis influenced the performance of organizations. Furthermore, the present study confirmed that public universities in Kenya employ a wide range of strategic management tools for environmental analysis. The participants agreed that SWOT analysis was always employed when dealing with significant issues (M=3.42; SD=1.20); the university periodically evaluated its internal ecosystem to identify its shortcomings and strengths, utilizing the SWOT analysis technique (M=3.52; SD=0.87); the universities consistently use balanced scorecards (BSC) to discover and enhance their internal operations and support their external achievements (M=3.60; SD=1.12); and respondents agreed that PESTLE was always used to identify critical external factors that may affect the university (M=3.74; SD=0.97). The study agrees with Asser et al. [22] who showed that commercially-oriented organizations

in Kenya employed different techniques for environmental analysis. Similarly, Nyamai [24] showed that both profit and non-profit organizations often use environmental scanning techniques including the SWOT and PESTLE analyses to better understand their environments and make informed decisions.

Based on the aggregate results, it was shown that environmental analysis highly affected performance of selected public universities in Nairobi County City, Kenya (M=3.71; SD=0.94). Thus, the current study agrees with the research by Yu et al. [20] which showed that performance is considerably influenced favorably by environmental analysis. This also confirms the research by Okwemba and Njuguna [11] that employed a descriptive approach to examine environmental scanning and Chemelil Sugar Company's performance and found environmental scanning is strongly connected to performance. Notwithstanding the contextual differences, a strong connection between environmental analysis and performance was established [42-46].

4.3 Inferential Analysis

The purpose of the inferential analysis, presented was to establish whether there was any relationship between the environmental analysis and public universities in Nairobi City County, Kenya through Pearson's correlation analysis and multiple regression analysis (MRA). The threshold was at 0.05 significance level. The correlation analysis are in Table 2.

Table 2. Correlation Analysis statistics

		Performance of public universities	Environmental analysis
Performance of public universities	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	85	
Environmental analysis	Pearson Correlation	.183	1
	Sig. (2-tailed)	.047	
	N	85	85

Source: Research Data (2023)

These results show that each of the environmental analysis ($p = 0.047$, $r=0.183$) was significantly related to public universities in Nairobi City County since the p-value was less than 0.05. These findings agree with those in the study by Okwemba and Njuguna's [11] where the correlation analysis results showed a significant connection between performance and strategic direction, while regression analysis showed a significantly linked relationship between strategic direction and performance. These finding agree with those in the research by Nkemchor and Ezeanolue [21] who revealed that conducting environmental scanning had a significant positive effect on the performance of the organization. Moreover, the findings confirm those of Lotayif [25] who investigated the relationship between performance and scanning and found significant correlations between performance and scanning. The current study also agrees with Issack and Muathe [26] where environmental scanning and performance were found to be positively correlated, and regression analysis showed significant effect of environmental scanning on performance. In other words, conducting an environmental analysis is essential to ensuring the performance of the universities. Also, in the research by Mang'ana, Rotich, Hassan, and Orwa [27] environmental scanning and performance were found to be positively correlated. The study obtained a summary of the model as captured in Table 3.

According to the results in Table 3, the coefficient of determination (R^2) of 0.3345, implies that 33.45% of change in public universities in Nairobi City County is explained by environmental analysis.

The Analysis of Variance (ANOVA) statistics were used to establish whether the beta value; which implies an insignificant in estimating public universities in Nairobi City County or at least one

$\beta_i \neq 0$ which implies a significant model in estimating public universities in Nairobi City County. The results are captured in Table 4.

The results indicate that the model is statistically significant, with an F-value of 14.489 and a p-value less than .001. In addition, the R-squared value is significant, indicating a strong correlation between the model and the dependent variable. This suggests that environmental analysis is useful in explaining the performance of public universities in Nairobi City County.

The study performed regression analysis of all the IV's; strategic direction, environmental analysis, resource planning, and monitoring plan, against the DV; Public universities in Nairobi City County, Kenya to estimate the study model guided by Equation (i). The results are presented in Table 5.

According to the results, ($T= 2.028$; $p\text{-value} = 0.046$), the p-value is less than 0.05, which implies that there exists a significant relationship between environmental analysis and public universities in Nairobi City County. At $\alpha = 0.05$, 5% significance level, there is sufficient evidence that the environmental analysis are useful estimators of public universities in Nairobi City County. Accordingly environmental analysis has significant effect on public universities in Nairobi City County, Kenya and are therefore suitable estimator of performance on public universities in Nairobi City County, Kenya. The model from the results is derived to obtain linear regression equation; Public universities in Nairobi City County (\hat{Y}) = 0.021cons + 0.155 environmental analysis.

Thus, public universities in Nairobi City County increases by 0.021 units regardless of whether the explanatory variable, environmental analysis, is present or not. One unit change in

Table3. Model summary

Model Summary			
R	R Square	Adjusted R Square	Std. Error of the Estimate
.605 ^a	.3662	.3345	.0572793

a. Predictors: (Constant), Monitoring plan, Environmental analysis, Resource planning, Strategic direction
Source: Research Data (2023)

Table 4. Results of ANOVA

ANOVA^a					
	Sum of Squares	df	Mean Square	F	Sig.
Regression	.152	4	.038	11.555	.000 ^b
Residual	.262	80	.003		
Total	.414	84			

a. Dependent Variable: Performance of public universities
b. Predictors: (Constant), Monitoring plan, Environmental analysis, Resource planning, Strategic direction
Source: Research Data (2023)

Table 5. Results of regression coefficients

Coefficients^a					
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.021	.045		.456	.649
Environmental analysis	.155	.076	.183	2.028	.046

a. Dependent Variable: Performance of public universities
Source: Research Data (2023)

environmental analysis (X2) leads to a 0.155 unit increase in the public universities in Nairobi City County. It is shown in the results that environmental analysis had positive coefficients, which means it was directly proportional to public universities in Nairobi City, County. This means that an increase in environmental analysis leads to increase in public universities in Nairobi City, County and any decrease in environmental analysis will have an opposite effect on public universities in Nairobi City County.

5. SUMMARY OF STUDY FINDINGS

It was revealed that environmental analysis has a significantly positive effect on performance of universities in Nairobi City County ($p < 0.047$; $r = 0.185$; $\beta = 0.155$). That is, conducting an environmental analysis is essential to ensuring the performance of the universities to mean that analysing internal and external factors helps enhance performance of the university. This is spurred by ensuring regular environmental analysis in addition to creating a set of KPIs to monitor the accomplishment of its strategic

initiatives and using common strategic analysis tool including SWOT, BSC, and PESTLE. SWOT analysis is employed when dealing with significant issues in which case, the university should periodically evaluate its internal ecosystem to identify its shortcomings and strengths. On the other side, BSC should be analysed to discover and enhance their internal operations and support their external achievements while PESTLE is essential for identifying critical external factors that may affect the university. So, the universities should routinely assess their external environment to identify the issues and constraints.

6. CONCLUSIONS

In conclusion, environmental analysis has a significant and positive effect on public universities in Nairobi City County ($p < 0.047$; $r = 0.185$; $\beta = 0.155$) through analysing internal and external factors that relate to performance of the university either positively or negatively. This demands for spurred creating of a set of KPIs to monitor the accomplishment of strategic

initiatives and using common strategic analysis tool, including SWOT, BSC, and PESTEL in addition to routinely assessing its external environment to identify its issues and constraints.

7. RECOMMENDATIONS

Despite finding that environmental analysis played an important role on the performance public universities in Nairobi City County, the utilisation of the key strategic analysis tools was found to be inadequate. The staff seemed not have been informed on the importance of those tools. Accordingly, the study recommends for the public universities in Nairobi City County to sensitize their staff on the application of the basic environmental analysis tools, SWOT, BSC, and PESTLE. There should be sessions on practical usage of SWOT analysis, BSC for discovering and enhancing internal operations, and support external achievements, and PESTLE for identifying critical external factors affecting universities.

7.1 Recommendations for Future Research

The current study used quantitative data collected from public universities in Nairobi City County. This had a number of limitations such a generalization or applicability of the findings to other learning institutions. Since the sample was limited to public universities in Nairobi City County, the findings are not applicable within these universities. So, the study recommends for same study to be conducted among public universities and using a larger sample. Also, the use of quantitative approach had its own limitations of the inability to address qualitative concerns. For this reason, further research should be done using a combination of quantitative and qualitative approaches. Furthermore, the study did take care of moderating and control variables. So, in future, other researches should also take into consideration the mediating, moderating and control variables.

The study established that 33.45% of variation in performance of universities in Nairobi City County is explained by change in; strategic direction, environmental analysis, resource planning, and monitoring plans. This implies that there are other factors accounting for the remaining 76.55%. So, further studies should therefore be conducted to establish what

accounts for the 76.55% change of performance of universities in Nairobi City County.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Musee JD. Strategic management practices and performance of public universities in Kenya: Case of Multimedia University of Kenya (Masters Research Project, Management University of Africa); 2018.
2. Chang'ach JK. Postmodernism as a social science methodology. Comments on Haugerud's representation of Kenya. *Asia Pacific Journal of Multidisciplinary Research*. 2014;2(3):70- 75.
3. Waiganjo EW, Njeru AW. Influence of strategic direction on organizational performance in tourism government agencies in Kenya. *International Journal of Business and Commerce*. 2017;6(4):18-36.
4. Banker RD, Chang H, and Natarajan R. Productivity change, technical progress, and relative efficiency change in the public accounting industry. *Management science*. 2005 ;51(2):291-304.
5. Jama A. Effect of capital budgeting decisions on financial performance of commercial and services firms listed on nairobi securities exchange in Kenya (Doctoral dissertation, University of Nairobi); 2017.
6. Sosiawani I, Azahari Ri, Munauwar M, Rushami ZY. Strategic planning and firm performance: A proposed framework. *International Academic Research Journal of Business and Technology*. 2015;1(2): 201-207.
7. Akoyo Seline Indara, Bula Hannah Orwa, Peter Philip Wambua. Effect of e- reassign system on performance of Chartered Universities in Kenya. *International Journal of Economics, Commerce and Management*. United Kingdom ISSN 2348 0386. 2022;X(10). Available:<http://ijecm.co.uk/>.
8. Giteru AM, Bula H. An empirical analysis of the relationship between strategic human resource management and performance: A perspective of public universities in Nairobi City County, Kenya. *The strategic journal*

- of Business Management and change. 2023;10(2):383–395.
Available:www.strategicjournals.com,
©Strategic Journals
9. Odengo RA, Bula Hannah. Kiiru D. *Journal of Human Resource and Leadership* ISSN 2519-9099 (online). 2022;7(1):94-106.
Available:www.iprjb.org.
 10. Usuh EJ, Preston G. Strategic planning and performance measurement for public universities in Sulawesi, Indonesia; Quantitative approach. *International Journal of Social Sciences*. 2017;3(3):174-197.
DOI:https://dx.doi.org/10.20319/pijss.2017.33.174197
 11. Okwemba JA, Njuguna N. Effect of strategy formulation on performance of Chemelil Sugar Company in Kisumu County, Kenya. *African Journal of Emerging Issues*. 2021;3(11):29-42.
Available:https://ajoeijournals.org/sys/index.php/ajoei/article/view/246
 12. Hosany S, Martin D. Self-image congruence in consumer behavior. *Journal of Business Research*. 2012;65(5):685-91.
 13. Christodoulou A, Cullinane K. Identifying the main opportunities and challenges from the implementation of a port energy management system: A SWOT/PESTLE Analysis. *Sustainability*. 2019;11(6046):1-25
 14. Mutuku C. *The application of balanced scorecard in hospitality industry*. Munich: GRIN Verlag; 2018.
 15. Onah E. *Remuneration Policy and inequalities in Kenya, a SOURCE of Labour Wars: Borrowing from Global Lessons*; 2016.
 16. Ministry of Education Science and Technology [MoEST]. *Educational for All Review*. Moi University. Moi University background information; 2015.
Available:https://www.mu.ac.ke/index.php/en/about-moi-university/historical-background.html
 17. Kaburu JK, Embeywa EH. 'An evaluation of quality of university education in Kenya during this massification era, Mediterranean Journal of Social Sciences 2014;5(5):345-349.
 18. Nyangau, JZ. Higher education as an instrument of economic growth in Kenya, FIRE: Forum for International Research in Education. 2014;1(1):7-25.
 19. Marwa N. Micro, small and medium enterprises' external financing challenges: The role of formal financial institutions and development finance intervention in Tanzania. *International Journal of Trade, Economics and Finance*. 2014;5(3):230.
 20. Yu, W, Chavez, R, Jacobs M, Wong CW, Yuan C. Environmental scanning, supply chain integration, responsiveness, and operational performance. *International Journal of Operations and Production Management*. 2019;39(5):787-814.
DOI:https://doi.org/10.1108/IJOPM-07-2018-0395
 21. Nkemchor EM, Ezeanolue ET. Effect of strategic management on organizational performance in tertiary institution in Delta State, Nigeria. *International Journal of Innovative Social Sciences & Humanities Research*, 2021; 9(3):75-87.
 22. Asser JH, Waiganjo E, Njeru A. influence of dynamic environmental scan practices on performance of commercial-based state parastatals in Kenya. *The Strategic Journal of Business & Change Management*, 2018;5(3):555 - 581
 23. Al-Hawary SIS, Al-Hamwan AM. Environmental analysis and its impact on the competitive capabilities of the commercial banks operating in Jordan. *International Journal of Academic Research in Accounting, Finance and Management Sciences*. 2017;7(1): 277–290
 24. Nyamai EM. *Role of strategic management practices on enhancing service delivery in the Judiciary of Kenya*. (Master Project., University of Nairobi); 2018.
 25. Lotayif SMAM. Environmental scanning mechanism and its effects on the performance: Evidence from UAE. *International Journal of Business and Management*. 2018;13(1):190-208.
DOI:10.5539/ijbm.v13n1p190
 26. Issack IA, Muathe SMA. Strategic management practices and performance of public health institutions in Mandera County, Kenya. *International Journal for Innovation Education and Research*. 2017; 5(12).
DOI:https://doi.org/10.31686/ijer.vol5.iss12.880
 27. Mang'ana RO, Rotich Hassan G, Orwa G. Influence of environmental scanning on performance of Matatu savings and credit cooperatives in Kenya. *Journal of Business and Strategic Management*. 2017;2(4):32-53

- Available: www.carijournals.org
28. Schechner R. Performance theory (2nd ed.). New York: Routledge; 2003.
 29. Caine RN, Caine G. Education on the Edge of Possibility. Association for Supervision and Curriculum Development Alexandria, VA; 1997.
 30. Glaser R, Chudowsky N, Pellegrino JW, Eds. Knowing What Students Know. The Science and Design of Educational Assessment. National Academies Press, Washington DC; 2001.
 31. Wright PM, Snell SA, Dyer L. New models of strategic HRM in a global context. *The International Journal of Human Resource Management*. 2005;16(6):875-881.
 32. Donaldson L, Luo BN. Some developments in the contingency theory of organizational design. EIASM workshop on information and organization Design. Brussels: Belgium; 2009.
 33. Barney RJ, Delwyn N. Resource-based theory: Creating and sustaining competitive advantage. Oxford: Oxford University Press; 2007.
 34. Cooper DR, Schindler PS. *Business research methods*. New York. McGraw-Hill
 35. University of Nairobi [UON]. Programmes & Faculties; 2022.
Available: <https://uonbi.ac.ke/programmes-faculties#:~:text=The%20University%20of%20Nairobi%20offer,11%20Faculties%20and%2056%20Departments>.
 36. Kenyatta University. Kenyatta University; 2022.
Available: <http://www.ku.ac.ke/index.php/academicals/schools-departments>
 37. The Technical University of Kenya [TUK]. TU-K News. Nairobi: TUK; 2016; 2022.
Available: <https://tukenya.ac.ke/>
 38. Yamane, T. Statistics, an introductory analysis, 2nd Ed., New York: Harper and Row; 1967.
 39. Kothari, CR. Research methodology: Methods and techniques. Reprint. New Delhi: New Age International (P) Ltd; 2012.
 40. Creswell JW. A concise introduction to mixed methods research. SAGE publications; 2014.
 41. Mugenda, OM, Mugenda, AG. Research methods: Quantitative and qualitative approaches. Nairobi Kenya: ACTS; 2008
 42. Wright PM, Snell SAI, Dyer L. New models of strategic HRM in a global context. *The International Journal of Human Resource Management*. 2005;16(6):875-881.
 43. Awan HM, Bhatti I and Razaq Z. Process performance management: The impact of Performance indicators on the organizational profitability. In Proceedings of the 1st International Conference on Quality Engineering and Management, 2014 2014 Sep (p. 249). International Conference on Quality Engineering and Management.
 44. Koumparoulis DN. Financial development and economic growth. In Strategic Infrastructure Development for Economic Growth and Social Change. 2015;24-37. IGI Global.
 45. Munene II. The Contours of Internationalization in Kenya's Universities: The Challenges of Quality and Relevance. In *Reimagining Mobility in Higher Education: For The Future Generations of International Students*. Cham: Springer International Publishing. 2022;179-194.
 46. Tomlinson IP, Alam NA, Rowan AJ, Barclay E, Jaeger EE, Kelsell D, Leigh I, Gorman P, Lamlum H, Rahman S, Roylance RR. Germline mutations in FH predispose to dominantly inherited uterine fibroids, skin leiomyomata and papillary renal cell cancer. *Nature genetics*. 2002;30(4):406.
 47. Bougie R, Sekaran U. Research methods for business: A skill building approach. John Wiley & Sons; 2019.

© 2023 Nyoike and Bula; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:
The peer review history for this paper can be accessed here:
<https://www.sdiarticle5.com/review-history/109048>