



INFLUENCE OF VERTICAL DIVERSIFICATION ON PERFORMANCE OF CHARTERED PUBLIC UNIVERSITIES IN KENYA: MODERATING ROLE OF LEADERSHIP STYLE

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ABSTRACT

Chartered public universities play a central role in promoting national development through teaching, research, innovation, and community engagement. However, declining government funding, increasing operational costs, reduced student enrolment, heightened competition, and growing demands for institutional accountability have compelled universities to adopt innovative strategic approaches to enhance organizational performance including vertical diversification. Despite its growing adoption, empirical evidence regarding the influence of vertical diversification on the performance of chartered public universities, particularly within developing economies, remains limited. This study examined the influence of vertical diversification on the performance of chartered public universities in Kenya and investigated the moderating role of leadership style in this relationship. The study was anchored on the Resource Based View Theory and Ansoff Growth Matrix Theory and adopted a positivist research philosophy and a descriptive correlational research design. The target population comprised managers from the thirty-six chartered public universities in Kenya. A sample of 205 respondents was selected using Yamane's sampling formula, of whom 170 returned completed questionnaires, representing a response rate of 82.9 percent. Data were collected using a structured questionnaire and analyzed using descriptive statistics, binary logistic regression, and moderated binary logistic regression. The findings established that vertical diversification exerted a positive and statistically significant influence on the performance of chartered public universities. The results further revealed that leadership style significantly strengthened the relationship between vertical diversification and organizational performance. The study concludes that investment in vertically integrated academic, research, and professional service activities enhances institutional competitiveness and long-term sustainability when supported by effective leadership. The findings contribute to strategic management literature by extending empirical evidence on vertical diversification within higher education and provide practical insights for university managers and policy makers seeking to strengthen institutional performance.

KEYWORDS: Vertical Diversification, Organizational Performance, Leadership Style, Chartered Public Universities, Strategic Management, Kenya.

1. INTRODUCTION

Higher education institutions have become indispensable drivers of national development through their contribution to human capital formation, scientific research, technological innovation, and socio economic transformation. Universities are also increasingly expected to commercialize research outputs, foster entrepreneurship, strengthen university industry collaborations, and provide evidence based solutions to complex societal challenges. Consequently, organizational performance has emerged as a strategic imperative for universities seeking to remain relevant within an increasingly knowledge driven global economy (OECD, 2022; UNESCO, 2024; Hailu, 2024). Universities that consistently demonstrate superior performance are better positioned to attract talented students and faculty, secure competitive research funding, establish international collaborations, and contribute meaningfully to national and regional development.

Despite their strategic significance, universities across the world are operating in an environment characterized by declining public funding, demographic changes, digital transformation, globalization of higher education, and rising stakeholder expectations regarding accountability and institutional effectiveness. Governments are progressively shifting from traditional block funding to performance based financing models that require universities to demonstrate measurable outcomes in research excellence, graduate employability, innovation, and financial sustainability. Intensified competition for students, research grants, philanthropic funding, and international partnerships has compelled universities to reconsider conventional institutional strategies and embrace more entrepreneurial approaches to resource mobilization and organizational management (Times Higher Education, 2024; UNESCO, 2024; European University Association, 2024).



The challenges confronting higher education institutions are even more pronounced within developing economies, where universities operate under severe financial, infrastructural, and institutional constraints. Across many African countries, public universities grapple with inadequate government funding, expanding student enrolment, ageing infrastructure, limited research commercialization, weak industry linkages, and increasing pressure to enhance institutional quality while operating with constrained resources (Teferra, 2020; UNESCO IESALC, 2022; African Development Bank, 2024). Consequently, many African universities have increasingly embraced strategic management practices aimed at strengthening institutional resilience, improving operational efficiency, and enhancing organizational performance within highly resource constrained environments.

Kenya reflects many of the structural challenges experienced across the African higher education sector. Chartered public universities remain central to the country's socio economic development through the production of skilled human capital, advancement of scientific research, promotion of innovation, and provision of community service. However, these institutions continue to experience persistent financial distress arising from declining government capitation, increasing operational costs, growing institutional debt, intensified competition from private universities and international education providers. Recent reports indicate that many chartered public universities continue to experience declining financial sustainability, reduced research commercialization, pressure to improve graduate employability, and lower international competitiveness despite their strategic importance to national development (Commission for University Education, 2024; Universities Fund, 2024; Nganga, 2021). These challenges have compelled university managers to pursue innovative strategic approaches capable of strengthening organizational performance while ensuring long term institutional sustainability.

Higher education institutions have adopted diversification which enables for expansion beyond traditional reliance on tuition fees and government funding by developing alternative academic, research, commercial, and professional activities that enhance institutional resilience and competitiveness. Recent evidence indicates that universities across Europe, Asia, and Africa are increasingly investing in research commercialization, consultancy services, executive education, innovation hubs, university industry partnerships, and entrepreneurial ventures as mechanisms for strengthening financial sustainability and improving organizational performance (OECD, 2022; Salmi, 2023; Hénard & Roseveare, 2024).

Vertical diversification enables organizations to integrate activities across different stages of their value chain while strengthening operational efficiency and value creation. Vertical diversification in universities involves expanding upstream and downstream institutional activities through strengthening internal research capabilities, commercializing research outputs, establishing consultancy services, developing professional and executive education programmes, enhancing alumni engagement, creating innovation and incubation centres, and building stronger collaborations with Technical and Vocational Education and Training institutions, industry, government agencies, and other strategic partners. Universities leverage existing resources, improve knowledge transfer, generate additional revenue streams, strengthen stakeholder relationships, and enhance institutional competitiveness. Consequently, universities that successfully implement vertical diversification are better positioned to improve financial sustainability, research productivity, graduate employability, and overall organizational performance (Perkmann et al., 2019; Assefa, 2024; Kimathi & Irungu, 2024).

Despite the increasing recognition of diversification as a strategic management practice, existing empirical evidence on vertical diversification remains fragmented and inconclusive. Most previous studies have examined diversification within manufacturing firms, financial institutions, multinational corporations, and other private sector organizations where organizational objectives, governance structures, and performance indicators differ substantially from those of public universities (Santarelli & Tran, 2015; Morris, Fier, & Liebenberg, 2017; Ayden et al., 2020). Furthermore, findings reported across studies remain inconsistent, with some scholars reporting positive performance outcomes associated with diversification while others suggest that diversification may increase organizational complexity and managerial challenges, thereby producing mixed performance effects (Nganga & Marwa, 2021; Wang et al., 2024).

Empirically, limited evidence exists on the influence of vertical diversification on the performance of chartered public universities. Contextually, most previous studies have been undertaken in developed economies or private universities whose governance systems, funding structures, institutional mandates, and stakeholder expectations differ considerably from those of chartered public universities in Kenya, thereby limiting the generalizability of existing findings. Methodologically, many earlier studies have relied predominantly on descriptive statistics, correlation analysis, or conventional linear regression, approaches that provide limited insight into the probability of achieving improved organizational performance following the adoption of vertical diversification strategies. Theoretically, although the Resource Based View Theory and Ansoff Growth Matrix Theory provide compelling explanations for strategic diversification, their applicability to vertical diversification within publicly funded universities remains inadequately examined. Leadership style has increasingly been recognized as a strategic capability that shapes resource mobilization, organizational learning, innovation, and strategy implementation, suggesting that it may strengthen the effectiveness of vertical diversification initiatives (Northouse, 2025; Carvalho et al., 2022; Agazu, Kero, & Debela, 2025).

Against this background, the present study examined the influence of vertical diversification on the performance of chartered public universities in Kenya and investigated the moderating role of leadership style in this relationship. By integrating strategic



management theory with empirical evidence from Kenya's public university sector, the study contributes to the growing body of knowledge on higher education management. First, it extends diversification literature by examining vertical diversification as a distinct strategic capability rather than as one dimension of a broader diversification construct. Second, it provides empirical evidence from chartered public universities operating within a resource constrained environment, thereby addressing an important contextual gap in the literature. Third, it demonstrates how leadership style influences the effectiveness of vertical diversification in improving organizational performance, thereby offering practical insights for university managers, governing councils, and higher education policy makers seeking to strengthen institutional competitiveness, financial sustainability, and long term organizational success.

2. THEORETICAL FOUNDATION

2.1 Resource Based View Theory

The Resource Based View (RBV) Theory, advanced by Barney (1991), posits that organizations achieve superior performance by acquiring, developing, and effectively utilizing valuable, rare, inimitable, and non substitutable resources and capabilities. Such resources include human capital, organizational knowledge, technological capabilities, innovation, and managerial competence, which collectively provide sustainable competitive advantage (Barney et al., 2021).

The theory is applicable to higher education because universities increasingly compete for students, research funding, academic talent, and strategic partnerships. Consequently, institutional performance depends on the ability to leverage internal capabilities such as research excellence, innovation, academic expertise, and organizational knowledge. In this context, vertical diversification enables universities to strengthen these capabilities through research commercialization, consultancy services, professional development programmes, innovation hubs, and strategic collaborations, thereby enhancing financial sustainability and organizational performance (Perkmann et al., 2019; Salmi, 2023; Assefa, 2024).

Despite its relevance, RBV has been criticized for placing greater emphasis on internal resources while paying limited attention to external environmental factors and the dynamic processes through which resources are developed and renewed (Priem & Butler, 2001). Nevertheless, the theory provides an appropriate foundation for this study because it explains how chartered public universities can leverage their strategic resources through vertical diversification to improve organizational performance. It further suggests that effective leadership enhances the mobilization and deployment of these resources, thereby strengthening the relationship between vertical diversification and organizational performance.

2.2 Ansoff Growth Matrix Theory

The Ansoff Growth Matrix Theory, developed by Ansoff (1957), explains how organizations achieve growth through strategic expansion into new products and markets. The theory identifies diversification as one of the principal growth strategies through which organizations enhance competitiveness, reduce dependence on existing markets, and create new sources of value. Diversification enables organizations to leverage existing capabilities while responding to changing environmental conditions and emerging market opportunities (Ansoff, 1957; Ansoff, Kipley, Lewis, Helm-Stevens, & Ansoff, 2019).

The theory provides a useful framework for understanding how universities pursue growth by expanding beyond their traditional teaching mandate. Vertical diversification enables universities to strengthen their position through research commercialization, consultancy services, executive education, innovation hubs, professional development programmes, and strategic partnerships with industry and Technical and Vocational Education and Training institutions. These initiatives create additional revenue streams, improve institutional competitiveness, strengthen stakeholder engagement, and enhance organizational performance (Salmi, 2023; Kimathi & Irungu, 2024).

Despite its strategic relevance, the Ansoff Growth Matrix has been criticized for assuming that growth strategies can be implemented under relatively predictable environmental conditions, whereas organizations often operate in dynamic environments characterized by uncertainty and resource constraints. In addition, the theory provides limited guidance on the organizational capabilities required for successful strategy implementation (Mintzberg, Ahlstrand, & Lampel, 2009). Nevertheless, the theory is appropriate for the present study because it explains how vertical diversification serves as a strategic growth mechanism through which chartered public universities enhance institutional performance by expanding complementary activities along their value chain.

3. EMPIRICAL REVIEW

Vertical diversification has increasingly attracted scholarly attention as a strategic approach through which organizations strengthen operational efficiency, enhance value creation, and improve organizational performance. Within the higher education sector, vertical diversification encompasses initiatives such as research commercialization, consultancy services, professional and executive education, innovation hubs, technology transfer, alumni engagement, and strategic collaborations with industry and Technical and Vocational Education and Training institutions. These initiatives enable universities to leverage existing institutional capabilities while improving financial sustainability and organizational performance (Perkmann et al., 2019; Salmi, 2023; Assefa, 2024).



Empirical evidence supports the proposition that vertical diversification contributes positively to organizational performance. Studies undertaken across manufacturing, financial services, healthcare, and technology sectors have consistently reported that organizations pursuing vertically integrated activities achieve superior operational efficiency, stronger market competitiveness, improved resource utilization, and enhanced financial performance compared with organizations relying exclusively on traditional operating models (Barney et al., 2021; Wang et al., 2024).

Within higher education, the available literature has largely focused on broader institutional diversification rather than vertical diversification as a distinct strategic construct. Existing studies have predominantly examined revenue diversification, entrepreneurial universities, research commercialization, internationalization, and university industry collaboration as independent strategic initiatives. Collectively, these studies suggest that universities adopting diversified academic and commercial activities generally demonstrate stronger financial sustainability, enhanced research productivity, improved innovation capacity, and greater institutional competitiveness (OECD, 2022; UNESCO, 2024; Hailu, 2024). However, because these initiatives have frequently been examined independently, limited empirical evidence exists regarding their collective contribution as indicators of vertical diversification.

Evidence from Kenya remains similarly limited. Previous studies have largely examined diversification strategies within private universities, commercial enterprises, and other corporate organizations, while relatively little attention has been devoted to chartered public universities despite their distinct governance structures, funding mechanisms, and statutory responsibilities. Consequently, the extent to which vertically integrated activities enhance the performance of chartered public universities remains insufficiently understood (Nganga & Marwa, 2021; Kimathi & Irungu, 2024).

The reviewed literature reveals several important gaps. Empirically, evidence regarding the influence of vertical diversification on the performance of chartered public universities remains limited and inconclusive. Methodologically, previous studies have predominantly relied on descriptive statistics, correlation analysis, or conventional regression techniques, with limited application of probabilistic models capable of estimating the likelihood of improved organizational performance following the adoption of vertical diversification strategies. Contextually, findings generated from private universities and corporate organizations cannot be readily generalized to chartered public universities operating within Kenya's unique higher education environment. Furthermore, although previous studies acknowledge the importance of leadership in strategy implementation, limited attention has been given to its moderating influence on the relationship between vertical diversification and organizational performance. The present study addresses these empirical, methodological, contextual, and theoretical gaps by examining the influence of vertical diversification on the performance of chartered public universities in Kenya while evaluating the moderating role of leadership style.

Based on the foregoing review, the study hypothesized that:

H₀: Vertical diversification has no statistically significant influence on the performance of chartered public universities in Kenya.

4. MATERIALS AND METHODS

4.1 Research Philosophy

The study was guided by the positivist research philosophy, which assumes that relationships among study variables can be objectively measured and empirically tested using scientific methods. Positivism emphasizes objectivity, hypothesis testing, quantification of observed phenomena, and statistical generalization, making it appropriate for studies seeking to establish causal relationships between variables (Creswell & Creswell, 2023; Saunders, Lewis, & Thornhill, 2023). The philosophy was considered suitable because the study sought to examine the influence of vertical diversification on the performance of chartered public universities using quantitative data and inferential statistical techniques.

4.2 Research Design

The study adopted a descriptive correlational research design. The design is appropriate where the objective is to establish the nature and magnitude of relationships among variables without manipulating the study environment. It enables researchers to explain how variations in an independent variable influence changes in a dependent variable while maintaining observations within their natural setting (Creswell & Creswell, 2023). The design was therefore appropriate for examining the influence of vertical diversification on the performance of chartered public universities in Kenya and for evaluating the moderating role of leadership style.

4.3 Target Population and Sampling

The target population comprised managers drawn from the thirty-six chartered public universities in Kenya. These respondents were considered appropriate because they possess strategic responsibility for institutional planning, implementation of diversification initiatives, and organizational performance management. A sample of 205 respondents was determined using Yamane's sampling formula, from which 170 completed questionnaires were returned, representing a response rate of 82.9 percent. The achieved response rate was considered adequate for statistical analysis and generalization of the findings because it exceeded the minimum threshold recommended for survey research (Mugenda & Mugenda, 2019).



4.4 Data Collection

Primary data were collected using a structured questionnaire comprising items measuring vertical diversification, leadership style, and organizational performance. Responses were measured using a five point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Prior to the main survey, the questionnaire was subjected to pilot testing to assess clarity, reliability, and construct validity. Feedback obtained during the pilot study informed refinement of the instrument before administration to the sampled respondents.

4.5 Reliability and Validity of the Research Instrument

The reliability of the research instrument was assessed using Cronbach's alpha coefficient. According to Hair et al. (2022), a Cronbach's alpha coefficient of at least 0.70 demonstrates acceptable internal consistency among measurement items. The reliability coefficients obtained for vertical diversification, leadership style, and organizational performance exceeded the recommended threshold, confirming that the instrument was sufficiently reliable for subsequent statistical analysis.

Construct validity was evaluated using the Kaiser Meyer Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity. The KMO values exceeded the recommended minimum threshold of 0.50, while Bartlett's Test was statistically significant ($p < 0.05$), confirming that the measurement items adequately represented their respective constructs and were suitable for factor analysis (Hair et al., 2022).

4.6 Measurement of Study Variables

The study examined three variables: vertical diversification, leadership style, and organizational performance. Vertical diversification, the independent variable, was measured using 15 Likert scale items capturing the extent to which chartered public universities had integrated complementary activities along their institutional value chain. Leadership style, the moderating variable, was operationalized using 21 Likert scale items reflecting leadership practices that facilitate strategy implementation and organizational effectiveness. Organizational performance, the dependent variable, was measured using 15 Likert scale items representing both financial and nonfinancial dimensions of university performance.

Responses to all items were recorded on a five point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Composite scores were computed for each construct by summing the respective items, after which the mean and standard deviation were used to summarize respondents' perceptions. The use of composite measures derived from multiple Likert scale items is widely accepted because aggregated scores approximate interval level measurement, thereby supporting the application of parametric statistical techniques (Carifio & Perla, 2008; Norman, 2010).

For hypothesis testing, the composite scores for vertical diversification and organizational performance were recoded into binary categories to facilitate binary logistic regression analysis. This transformation enabled estimation of the probability of high organizational performance as a function of vertical diversification while preserving the study's inferential objectives.

4.7 Data Analysis

Data were analyzed using the Statistical Package for the Social Sciences (SPSS) Version 30. Descriptive statistics comprising means and standard deviations were computed to summarize respondents' perceptions of vertical diversification, leadership style, and organizational performance. Prior to hypothesis testing, diagnostic tests relating to missing data, normality, multicollinearity, and linearity were conducted to establish the suitability of the data for regression analysis.

The study hypothesis was tested using binary logistic regression because the dependent variable was recoded into a dichotomous outcome variable. The direct effect of vertical diversification on organizational performance was first estimated, after which the moderating effect of leadership style was examined by introducing the interaction term between vertical diversification and leadership style into the logistic regression model. Statistical significance was evaluated at the 5 percent level, while regression coefficients, Wald statistics, p values, and odds ratios were used to interpret the results (Hosmer et al., 2013).

5. RESULTS AND DISCUSSION

5.1 Descriptive Statistics for Vertical Diversification

Vertical diversification was operationalized using fifteen measurement items capturing the extent to which universities had strengthened internal integration through alumni engagement, research and innovation support, professional staff development, strategic institutional collaborations, and the provision of internally managed support services. Respondents rated each statement on a five point Likert scale, where higher mean scores indicated greater implementation of vertical diversification practices. The descriptive results are presented in Table 1.

**Table 1: Descriptive Statistics for Vertical Diversification (n = 170)**

Statement	Mean	Standard Deviation
This university maintains a well-organized, active alumni network.	3.48	1.132
Our alumni regularly mentor current students for industry entry.	3.37	1.114
The alumni association actively supports career advisory and job placement for graduates.	3.76	1.062
Internal research hubs provide technical and financial support to the university.	3.59	1.029
The institution has established adequate research incubation centers to nurture innovations.	3.46	1.105
Interdisciplinary research is actively promoted through existing incubation centers.	3.40	1.208
We have adequate professional development programs for academic and administrative staff.	3.61	1.183
Professional training opportunities provided internally meet ongoing workforce needs.	3.70	1.151
The institution has created strong backward links with TVETs and feeder colleges.	3.64	1.107
The university establishes strategic collaborations to enhance learning and research capacity.	3.51	1.111
Joint educational programs with external partners improve academic quality in our institution.	3.61	1.110
The institution owns and operates adequate student accommodation facilities internally.	3.61	1.158
Recreational and sports facilities are well maintained and internally managed.	3.52	1.022
In house university health services effectively meet staff and student needs.	3.29	1.155
The institution provides adequate welfare facilities to support internal campus community operations.	3.45	1.182

The descriptive results indicate that chartered public universities implement vertical diversification initiatives, with mean scores ranging from 3.29 to 3.76. The highest mean score ($M = 3.76$, $SD = 1.062$) was recorded for the statement that *the alumni association actively supports career advisory and job placement for graduates*, suggesting that universities increasingly recognize alumni as strategic partners in enhancing graduate employability and institutional relevance. Similarly, respondents agreed that professional training opportunities provided internally meet ongoing workforce needs ($M = 3.70$, $SD = 1.151$) and that universities have established strong backward linkages with Technical and Vocational Education and Training institutions and feeder colleges ($M = 3.64$, $SD = 1.107$). These findings demonstrate deliberate institutional efforts to strengthen internal capabilities and enhance collaboration across the higher education value chain.

The findings further show positive perceptions regarding the adequacy of professional development programmes ($M = 3.61$, $SD = 1.183$), the quality of joint educational programmes with external partners ($M = 3.61$, $SD = 1.110$), and the availability of institutionally managed student accommodation facilities ($M = 3.61$, $SD = 1.158$). Respondents also agreed that internal research hubs provide technical and financial support to the university ($M = 3.59$, $SD = 1.029$) and that universities have established strategic collaborations to strengthen learning and research capacity ($M = 3.51$, $SD = 1.111$). These results suggest that chartered public universities are increasingly investing in complementary activities that reinforce their core teaching and research functions while creating opportunities for innovation, resource mobilization, and institutional competitiveness.

However, comparatively lower mean scores were observed for the adequacy of in house university health services ($M = 3.29$, $SD = 1.155$), the promotion of interdisciplinary research through existing incubation centres ($M = 3.40$, $SD = 1.208$), and the provision of adequate welfare facilities to support the internal university community ($M = 3.45$, $SD = 1.182$). Although these mean values remain above the neutral point of the scale, they suggest that some aspects of vertical diversification require further strengthening to maximize their contribution to institutional performance.

The descriptive findings corroborate the growing body of literature that views vertical diversification as a strategic mechanism for strengthening organizational capabilities, enhancing institutional resilience, and improving long term performance. By investing in research commercialization, strategic partnerships, professional development, alumni engagement, and internally managed support services, universities create complementary capabilities that enhance value creation and reduce dependence on traditional funding sources. Similarly, Perkmann et al. (2019), Salmi (2023), and Assefa (2024), argue that vertically integrated academic and commercial activities improve knowledge transfer, strengthen stakeholder engagement, and enhance institutional competitiveness. The findings are also consistent with the Resource Based View Theory, which posits that organizations achieve superior performance by leveraging valuable institutional resources and capabilities (Barney et al., 2021), and with the Ansoff Growth Matrix Theory, which views diversification as a strategic growth mechanism through which organizations expand value creating activities and improve organizational performance (Ansoff et al., 2019).

5.2 Influence of Vertical Diversification on Organizational Performance

To examine the influence of vertical diversification on organizational performance, the composite scores for vertical diversification and organizational performance were transformed into binary variables prior to binary logistic regression analysis. Composite scores ranging from 15 to 45 were categorized as Low (0), while scores ranging from 46 to 75 were categorized as High (1). This transformation facilitated estimation of the probability of attaining high organizational performance as a function of vertical diversification.

Before interpreting the regression coefficients, the adequacy of the fitted binary logistic regression model was evaluated using the Omnibus Test of Model Coefficients, the Nagelkerke R^2 statistic, and the Hosmer and Lemeshow Goodness of Fit Test. The results are presented in Table 2.

Table 2: Goodness of Fit Statistics for the Binary Logistic Regression Model

Statistic	Value	Interpretation
Omnibus Test (χ^2)	85.992	
Degrees of Freedom	1	
p-value	<0.001	Model significantly improves prediction of organizational performance
-2 Log Likelihood	84.145	
Nagelkerke R^2	0.628	Vertical diversification explained 62.8% of the variation in organizational performance
Hosmer and Lemeshow χ^2	2.000	
Degrees of Freedom	1	
p-value	0.157	Model adequately fitted the data

The results in Table 2 indicate that the fitted binary logistic regression model was appropriate for estimating the influence of vertical diversification on organizational performance. The Omnibus Test of Model Coefficients was statistically significant ($\chi^2 = 85.992$, $df = 1$, $p < 0.001$), demonstrating that the inclusion of vertical diversification significantly improved the prediction of organizational performance compared with the intercept only model. The Nagelkerke R^2 value of 0.628 indicates that vertical diversification explained approximately 62.8% of the variation in organizational performance among chartered public universities in Kenya, reflecting substantial explanatory power. Furthermore, the Hosmer and Lemeshow Goodness of Fit Test was not statistically significant ($\chi^2 = 2.000$, $df = 1$, $p = 0.157$), confirming that there was no statistically significant difference between the observed and predicted organizational performance outcomes. Collectively, these statistics demonstrate that the fitted logistic regression model adequately represented the data and was appropriate for hypothesis testing. The binary logistic regression coefficients are presented in Table 3.

Table 3: Binary Logistic Regression Results for the Influence of Vertical Diversification on Organizational Performance

Variable	β	S.E.	Wald	p-value	Odds Ratio
Vertical Diversification					
Low Vertical Diversification (RC)	—	—	—	—	1.000
High Vertical Diversification	0.405	0.205	3.903	0.048	1.499

The binary logistic regression results indicate that vertical diversification exerted a positive and statistically significant influence on organizational performance ($\beta = 0.405$, S.E. = 0.205, Wald = 3.903, $p = 0.048$). The positive regression coefficient indicates that increasing the implementation of vertical diversification strategies increased the likelihood of achieving high organizational performance. The corresponding odds ratio of 1.499 indicates that chartered public universities implementing high levels of vertical diversification were approximately 1.5 times more likely to attain high organizational performance than universities characterized by low levels of vertical diversification.

The findings demonstrate that strengthening vertically integrated activities, including research commercialization, consultancy services, professional development programmes, strategic institutional collaborations, alumni engagement, innovation support, and other complementary value creating initiatives, contributes positively to university performance. Universities are able to strengthen resource utilization, generate alternative revenue streams, enhance stakeholder engagement, improve knowledge transfer, and reinforce their long term competitiveness.

The present findings are consistent with empirical evidence indicating that universities benefit when they integrate research, innovation, commercialization, and external partnerships into their core institutional activities. Ismail et al. (2021) established that university industry collaboration significantly enhanced research commercialization among Malaysian public universities, while O'Kane et al. (2022) found that technology transfer units performed more effectively when they were fully embedded within university structures. Similarly, Brantnell and Baraldi (2022) reported that effective technology transfer mechanisms strengthened innovation commercialization by facilitating the movement of research outputs into practical and commercial applications. These studies support the present findings by demonstrating that vertical integration of complementary academic and commercial activities strengthens institutional effectiveness and organizational performance. The findings also corroborate those of Tran and Vu (2022), who found that strategic university enterprise alliances enhanced innovation and institutional performance by strengthening collaboration between universities and industry. Likewise, Arranz et al. (2022) reported that stronger university industry partnerships improved graduate employability through enhanced knowledge exchange and professional engagement.

Nevertheless, previous studies also suggest that the performance benefits of vertical diversification depend on effective implementation. Zhang et al. (2022) observed that excessive dependence on limited collaboration networks may constrain innovation outcomes, while Zhang et al. (2023) reported that commercialization initiatives produced superior performance only when supported by adequate institutional capabilities and governance structures.

The present findings support the Resource Based View Theory, which posits that organizations achieve superior performance by effectively leveraging valuable, rare, and difficult to imitate institutional resources and capabilities (Barney et al., 2021). Chartered public universities that successfully leverage research capacity, academic expertise, innovation capabilities, and strategic partnerships through vertical diversification are therefore more likely to enhance organizational performance. The findings also reinforce the Ansoff Growth Matrix Theory, which views diversification as a strategic growth mechanism through which organizations create additional value, strengthen competitiveness, and improve organizational performance (Ansoff et al., 2019). Based on these findings, the null hypothesis stating that vertical diversification has no statistically significant influence on the performance of chartered public universities in Kenya was rejected.

5.3 Moderating Effect of Leadership Style on the Relationship Between Vertical Diversification and Organizational Performance

The study further examined whether leadership style moderated the relationship between vertical diversification and organizational performance among chartered public universities in Kenya. To test the moderating effect, an interaction term between vertical diversification and leadership style was introduced into the binary logistic regression model. The results are presented in Table 4.

Table 4: Moderated Binary Logistic Regression Results

Variable	β	S.E.	Wald	p-value	Odds Ratio
Vertical Diversification	—	—	—	—	1.000
Low Vertical Diversification (RC)					
High Vertical Diversification	1.959	0.612	10.247	0.001	7.092
Leadership Style	—	—	—	—	1.000
Less Effective Leadership Style (RC)					
More Effective Leadership Style	1.213	0.433	7.848	0.005	3.364
Vertical Diversification × Leadership Style	0.681	0.292	5.439	0.020	1.976

The moderated binary logistic regression results indicate that leadership style significantly strengthened the relationship between vertical diversification and organizational performance. The interaction term between vertical diversification and leadership style was positive and statistically significant ($\beta = 0.681$, S.E. = 0.292, Wald = 5.439, $p = 0.020$), demonstrating that the positive influence of vertical diversification on organizational performance became stronger under more effective leadership. The corresponding odds ratio of 1.976 indicates that the combined effect of high vertical diversification and more effective leadership nearly doubled the likelihood of achieving high organizational performance compared with universities characterized by low levels of vertical diversification and less effective leadership.

The results further show that vertical diversification remained a strong and statistically significant predictor of organizational performance after accounting for the moderating influence of leadership style ($\beta = 1.959$, S.E. = 0.612, Wald = 10.247, $p = 0.001$, OR = 7.092). This finding indicates that universities implementing high levels of vertical diversification were approximately 7.1 times more likely to achieve high organizational performance than institutions with low levels of vertical diversification. In addition, leadership style independently exerted a positive and statistically significant influence on organizational performance ($\beta = 1.213$, S.E. = 0.433, Wald = 7.848, $p = 0.005$, OR = 3.364), suggesting that universities characterized by more effective leadership were approximately 3.4 times more likely to attain high organizational performance than those with less effective leadership.

The effectiveness of vertical diversification is substantially amplified by leadership that is capable of mobilizing institutional resources, coordinating strategic initiatives, fostering collaboration, and facilitating successful implementation. Effective leadership creates an enabling environment through which research commercialization, consultancy services, professional development programmes, strategic partnerships, and other vertically integrated activities can be effectively aligned with institutional objectives, thereby maximizing their contribution to organizational performance.

The present findings are consistent with previous studies. Carvalho et al. (2022) found that effective leadership strengthens organizational adaptability, innovation, and strategic execution by promoting collaboration, organizational learning, and employee commitment. Similarly, Agazu, Kero, and Debela (2025) reported that leadership capability enhances organizational performance



by improving resource coordination and facilitating successful strategy implementation. Within higher education, studies have also shown that transformational and participatory leadership styles strengthen research productivity, institutional innovation, and university industry collaboration, thereby enhancing the effectiveness of strategic initiatives aimed at improving university performance.

The findings support the Resource Based View Theory, which recognizes leadership capability as a valuable organizational resource that enhances the effective deployment of institutional assets and capabilities to generate sustainable competitive advantage (Barney et al., 2021). The results also extend the Ansoff Growth Matrix Theory by demonstrating that the performance benefits of diversification depend not only on strategic expansion but also on the effectiveness of leadership responsible for coordinating and implementing diversification initiatives. Consequently, leadership style serves as an important strategic mechanism through which chartered public universities translate vertical diversification into superior organizational performance.

The study therefore concludes that leadership style significantly moderates the relationship between vertical diversification and organizational performance among chartered public universities in Kenya.

6. CONCLUSION AND IMPLICATIONS

The study findings established that vertical diversification exerted a positive and statistically significant influence on organizational performance, indicating that universities implementing vertically integrated initiatives were more likely to achieve superior institutional performance than those with lower levels of implementation. The study further established that leadership style significantly strengthened this relationship, demonstrating that the performance benefits of vertical diversification are enhanced when supported by effective institutional leadership.

The study contributes to strategic management and higher education literature by extending the application of the Resource Based View Theory and the Ansoff Growth Matrix Theory to the context of chartered public universities in Kenya. While the Resource Based View explains how universities leverage internal resources and capabilities to improve performance, the Ansoff Growth Matrix Theory demonstrates how strategic diversification creates additional opportunities for institutional growth and value creation. From a practical perspective, the findings suggest that university councils, vice chancellors, and senior management teams should prioritize investments in vertical diversification initiatives which should be accompanied by leadership development programmes aimed at enhancing strategic decision making, organizational coordination, stakeholder engagement, and effective implementation of institutional strategies.

Future studies may extend this work by examining private universities, technical and vocational education institutions, or higher education systems in other national contexts to enhance the generalizability of the findings. Further research may also investigate additional organizational and environmental factors that influence the effectiveness of diversification strategies, including organizational culture, digital transformation, governance structures, institutional innovation capability, and public policy environments.

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