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Strategic Role of CRM Collaboration Networks in Leveraging the Competitiveness of Private Universities in Kenya

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Abstract

The study examined the strategic role of Customer Relationship Management collaboration networks (CCRM) in enhancing the competitiveness of private universities in Kenya. It specifically assessed the influence of internal departmental collaboration, interdepartmental collaboration, alumni relations, strategic partnerships, and external stakeholder collaboration on institutional competitiveness. The study was guided by CRM Theory, Relationship Marketing Theory, and the SERVQUAL model, and adopted a cross-sectional descriptive design targeting 36 private universities. A sample of 204 respondents from 17 institutions, including university administrators, staff, and student leaders, was selected using stratified, purposive, and convenience sampling. Using questionnaires, interviews, and focus group discussions, data were collected and analysed using a combination of quantitative and qualitative methods. The results demonstrated a meaningful positive association between CRM collaboration networks and university competitiveness. Internal departmental collaboration, alumni relations, and external collaborations were found to significantly enhance competitiveness, collectively explaining 43.5 per cent of the variance. However, interdepartmental collaboration and strategic partnerships showed limited statistical influence, indicating weak integration of CRM systems across institutional units and external networks. Qualitative findings supported these results, highlighting strong internal coordination but weak cross-departmental integration and underdeveloped alumni and partnership engagement structures. The study concludes that CCRM is a key strategic driver of competitiveness in private universities, with greater impact achieved through well-coordinated internal systems and strengthened external stakeholder engagement. It recommends the adoption of an integrated CRM strategy that enhances cross-functional collaboration and expands external engagement to fully leverage institutional competitiveness in higher education.

Key words: Alumni relations, competitiveness, CRM collaboration networks, external collaboration, interdepartmental collaboration, internal departmental collaboration.



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INTRODUCTION

Private universities in Kenya continue to experience persistent challenges, including low enrolment growth, weak interdepartmental coordination, limited alumni engagement, and underdeveloped external partnerships, all of which constrain institutional competitiveness. Although Customer Relationship Management (CRM) systems have increasingly been adopted, their application remains largely operational and fragmented, with minimal integration into cohesive collaboration networks that connect internal departments, alumni, and external stakeholders. Consequently, many institutions are unable to fully leverage CRM as a strategic tool for enhancing student recruitment, retention, service delivery, and stakeholder engagement. While existing studies in Kenya and the wider East African region recognise the importance of CRM, they place greater emphasis on policy, technology, and service delivery, with limited attention to CRM collaboration networks as an integrated construct influencing competitiveness. Furthermore, most studies conceptualise CRM as a standalone system rather than examining its collaborative dimensions, creating a significant empirical gap in understanding how internal, interdepartmental, alumni, partnership, and external networks collectively drive competitiveness in private universities in Kenya.

Customer Relationship Management Collaboration Networks (CCRM) refer to integrated systems of internal and external stakeholder linkages that enable institutions to coordinate communication, share information, and collaboratively engage students, staff, alumni, and external partners to enhance institutional value and performance. In higher education, CCRM emphasises the alignment of departmental functions and stakeholder relationships to improve service delivery, strengthen engagement, and sustain long-term competitiveness (Buttle, 2021). Evidence from global and regional contexts indicates that CRM-driven collaboration enhances institutional competitiveness through improved communication, data integration, and stakeholder engagement (Mithas et al., 2005). However, across Africa, CRM adoption remains uneven, with many institutions struggling to integrate technological systems, service delivery processes, and collaborative networks into cohesive and strategic frameworks. In Kenya, although CRM systems are evident in areas such as student portals and administrative functions, collaboration across academic units, alumni networks, and external stakeholders remains weak and underdeveloped.

The competitive landscape of higher education in Kenya further amplifies the need for effective collaboration networks. With total university enrolment surpassing 600,000 students in 2024, private universities still account for less than a quarter of total admissions, reflecting ongoing competitiveness challenges (Commission for University Education, 2025; Kenya Education Sector Report, 2024). In this context, CCRM has emerged as a potentially critical strategic mechanism for enhancing institutional competitiveness. However, its implementation in many private universities remains fragmented and weakly integrated across academic, administrative, and external engagement structures (Khashab et al., 2022).

This study, therefore, seeks to examine the strategic role of Customer Relationship Management collaboration networks (CCRM) in leveraging the competitiveness of private universities in Kenya by evaluating internal departmental collaboration, examining interdepartmental linkages, assessing alumni relations, investigating strategic partnerships, and analysing external collaborations. The study is guided by the null hypothesis that there is no significant relationship between Customer Relationship Management collaboration networks (CCRM) and the competitiveness of private universities in Kenya.

LITERATURE REVIEW

Theoretical Framework

This study is grounded in Relationship Marketing Theory (RMT), Customer Relationship Management Theory (CRMT), and SERVQUAL Theory. RMT emphasises trust, commitment, and long-term relationship building as drivers of student satisfaction, loyalty, and retention, which enhance institutional competitiveness (Morgan & Hunt, 1994). CRMT complements this by focusing on the integration of people, processes, and technology to manage stakeholder interactions and support data-driven decision-making and coordinated service delivery (Buttle, 2021). SERVQUAL Theory links service quality dimension's reliability, responsiveness, assurance, empathy, and tangibles to student experiences and institutional performance outcomes (Zeithaml et al., 1996). Collectively, these theories provide a foundation for understanding how CRM-enabled interactions and service processes translate into competitive advantage.

CRM Collaboration Networks and Competitiveness

CRM collaboration networks (CCRM) integrate internal and external stakeholders through coordinated

communication, data sharing, and relationship management (Buttle, 2021). Internally, CCRM enhances collaboration among students, faculty, and staff, enabling personalised support and improved responsiveness to student needs. Interdepartmental integration further strengthens coordination by centralising student data across functional units, reducing redundancies and improving operational efficiency (Seeman & O'Hara, 2006; Chen & Popovich, 2003)

Externally, CRM facilitates engagement with alumni, industry partners, and other stakeholders, supporting student recruitment, retention, and career development through internships, mentorship, and partnerships. Strategic partnerships enabled through CRM systems also promote resource sharing, collaboration, and institutional visibility, contributing to long-term sustainability and competitiveness (Seeman & O'Hara, 2006; Payne & Frow, 2005; Baran & Galka, 2016).

Knowledge Gaps and Research Justification

Despite its growing relevance, the literature on CCRM remains fragmented. Existing studies often examine CRM as either a technological tool or a relationship management approach, with limited focus on collaboration networks as an integrated system. Moreover, prior research emphasises isolated outcomes such as service quality, satisfaction, or retention, without examining the interdependencies among internal, interdepartmental, alumni, and external collaboration networks (Payne & Frow, 2005; Reinartz et al., 2004).

There is also inconsistency in how CRM influences organisational performance, with some studies emphasising operational efficiency and others focusing on relational capital, customer equity, and stakeholder engagement (Reinartz et al., 2004; Payne & Frow, 2005; Rust et al., 2004). In the Kenyan context, empirical evidence is limited and largely descriptive, focusing on CRM adoption and service delivery challenges rather than integrated collaboration networks. Consequently, there is a need for holistic, network-based models that explain how multiple CCRM dimensions jointly influence competitiveness, particularly within private universities operating under resource constraints.

METHODOLOGY

This study adopted a mixed-methods approach within an epistemological framework, integrating quantitative and qualitative techniques to examine the role of CRM collaboration networks in private universities in Kenya

(Creswell & Creswell, 2023). A cross-sectional descriptive research design was employed to capture data at a single point in time. The target population comprised all 36 accredited private universities in Kenya and key institutional stakeholders, including registrars, deans of students, marketing and ICT managers, deans of schools, and student leaders. Stratified random sampling was used to select 17 universities across ownership categories, while purposive and convenience sampling techniques were applied to identify knowledgeable and accessible respondents (Bryman & Bell, 2022). This resulted in a sample size of 204 participants, determined using the Cochran sampling technique (Cooper & Schindler, 2020).

Data were gathered through structured questionnaires, interviews, and focus group discussions to achieve methodological triangulation. Validity was enhanced through expert review and pilot testing, while reliability was assessed using internal consistency measures. To examine relationships and predictive effects among variables, quantitative analysis was conducted using descriptive statistics, Pearson's correlation, and multiple regression. Qualitative data were analysed thematically to produce patterns and insights that supported the quantitative outcomes (Creswell & Creswell, 2023). Ethical approval was secured from institutional authorities, and informed consent was obtained from all participants. The study ensured voluntary participation, confidentiality, anonymity, and protection from harm, while upholding integrity, transparency, and objectivity throughout the research process.

FINDINGS AND DISCUSSION

Respondents Biodata

This section presents the demographic profile and response characteristics of the study participants. It is crucial in establishing the validity and reliability of the data collected. These include response rate, respondent composition by designation and experience levels within the institution. Understanding the respondents and the context of their perspectives on CRM ensures balanced representation across strategic, analytical and operational roles.

Response Rate and Composition

The table below summarises the number of targeted respondents versus actual responses received across three data collection instruments: questionnaires, interviews, and focus group discussions (FGDs).

Table 1: Response Rate and Composition

Instrument Category /	Target Respondents	Responses Received	Response Rate (%)	% Of Total Respondents
Questionnaire (Total)	85	70	82.3	37.0
Interviews	34	34	100	18.0
Focus Groups (Students)	17 groups × 5 = 85	85	100	45.0
TOTAL	204	189	93.0	100.0

Source: Mwangi et al. (2025)

The overall response rate was 93 per cent, indicating high participant engagement. All targeted participants for interviews and focus group discussions responded, while the questionnaire achieved an 82.35 per cent return rate.

Reliability Test

Cronbach’s Alpha indicates good internal consistency among CRM collaborative networks constructs, with a Cronbach’s Alpha coefficient of 0.813. This indicates a high level of internal consistency among the items. A commonly accepted rule in social science research is that a Cronbach’s alpha value of ≥ 0.70 is considered acceptable, while values above 0.80 indicate good to strong reliability (Nunnally & Bernstein, 1994; Hair et al., 2019).

Factor Analysis for CRM Collaboration Networks

To examine the latent dimensions underlying CRM collaboration networks in private universities, Exploratory Factor Analysis (EFA) was carried out. This approach aimed to identify coherent groupings of variables that explain how CRM facilitates collaboration both internally and externally. The predefined constructs were: Internal Collaboration, Interdepartmental Collaboration, Alumni Collaboration, Partnership Collaborations, and External Collaboration.

The Kaiser-Meyer-Olkin (KMO) and Bartlett’s Test of Sphericity were used to assess the adequacy of the sample and the suitability of the dataset for factor analysis. The results are presented below.

Table 2: Factor Analysis for CRM Collaboration Networks

CRM Collaboration Network Items	Internal	Interdepartmental	Alumni	Partnership
Internal department Collaboration	0.851			
Inter department Collaboration		0.843		
Strategic partners Collaboration				0.783
Alumni Collaboration			0.864	
External stakeholders				
Career enhancement	0.726			0.615
Joint programs,				0.804

Table 3: Total Variance Explained

Component	Initial Eigenvalue	% Of Variance	Cumulative %
Internal Collaboration	2.497	35.67%	35.67%
Interdepartmental Collaboration	1.429	20.41%	56.08%
Alumni Collaboration	1.063	15.18%	71.26%
Partnership Collaboration	0.884	—	—
External Collaboration	0.731	—	—

Table 4: KMO and Bartlett’s Test

Measure	Value
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.802
Bartlett’s Test of Sphericity Approx. Chi-Square	635.382
Df	21
Sig.	0.000

Rotation Method: Varimax with Kaiser Normalisation
Rotation converged in 6 iterations.

The KMO value of 0.802 exceeds the minimum acceptable threshold (0.50), confirming sample adequacy. The significant Bartlett’s Test ($\chi^2 = 635.382$, $df = 21$, $p < 0.05$) indicates that the correlation matrix is suitable for factor analysis. Principal Component Analysis (PCA) with Varimax rotation, three components with eigenvalues above 1 were retained, collectively accounting for 71.26 per cent of the total variance, well above the recommended 60 per cent threshold in social science research.

Internal departmental Collaboration explained 35.67 per cent of the variance with strong loadings on internal departmental engagement (0.851) and CRM-supported access to student opportunity networks (0.726). Interdepartmental Collaboration captured inter-unit connectivity, such as admissions and student services, which had a loading of 0.843; Alumni Collaboration emerged as a distinct construct, with strong factor

loading (0.864) reflecting alumni participation in institutional development activities.

However, partnership collaboration and external collaboration also demonstrated strong, though overlapping, loadings, especially for institutional outreach and engagement with external stakeholders, with loadings of 0.783 and 0.871, respectively. All retained loadings exceeded the minimum threshold of 0.50, confirming that each item contributes meaningfully to its respective factor.

Hence, the results validate that CRM collaboration networks are multidimensional, comprising both internal communication mechanisms and external stakeholder engagements. This reinforces the role of CRM collaboration networks as a strategic enabler in enhancing competitiveness across academic and administrative functions.

Descriptive Statistics for CRM Collaboration Networks

The study used mean and standard deviation to analyse key constructs of CRM collaboration networks, namely

internal collaboration, interdepartmental collaboration, alumni collaboration, partnership collaboration, and external collaboration.

Table 5: CRM Collaboration Networks and Competitiveness

Collaboration Category	Statement	Mean	SD
Internal Collaboration	Access to career services	3.93	0.89
Internal Collaboration	Internal departmental collaboration	4.09	0.78
Interdepartmental Collaboration	Interdepartmental collaboration	2.94	1.34
Alumni Collaboration	Alumni engagement activities	3.31	1.12
Partnership Collaboration	Strategic partnerships growth	3.01	1.24
Partnership Collaboration	Research and exchange programs	3.07	1.29
External Collaboration	Stakeholder collaboration	3.23	1.03

The findings in the table above reveal that CRM is effective in promoting internal departmental collaboration through seamless communication, engagement and collaboration between staff, faculty, and students within the department (Mean = 4.09) and supporting student access to career services through internship, industrial practical, scholarships, career advice, job opportunities and other networks (Mean = 3.93). This demonstrates CRM's value in streamlining communication and enhancing service delivery within institutions. These factors are closely linked to student success and institutional performance, as effective coordination, timely information flow, and responsive service structures improve both academic and administrative outcomes. These results underscore the role of CRM in strengthening internal processes, particularly in areas that directly influence student outcomes and operational efficiency.

However, the data also highlight critical gaps in CRM effectiveness regarding external and cross-functional collaboration. Lower scores in interdepartmental collaboration across all the relevant departments, such as admissions, student services and academic advisory (Mean = 2.94). This suggests underutilization of CRM systems in building broader interdepartmental networks.

Strategic partnerships, especially with prospective students, alumni, sponsors, industry, local community and international organisations (Mean = 3.01), and research and exchange programs by managing joint programs, research collaborations and exchange programs with other institutions and partners (Mean = 3.07). This suggests underutilization of CRM systems in building broader institutional networks and collaborations.

Moderate performance is noted in alumni engagement in fundraising, mentorship, networking opportunities and marketing institution (Mean = 3.31), signalling missed opportunities in enhancing long-term competitiveness through external engagement. CRM strategies can significantly enhance alumni relationships and stakeholder communication, which are pivotal for fundraising, branding, and strategic alliances (Seeman & O'Hara, 2006; Baran & Galka, 2016). To fully leverage CRM systems, universities must expand their strategic focus beyond internal coordination to include robust external relationships and partnerships.

Linearity Test

To evaluate the assumption of linearity of the data, the study adopted the Analysis of Variance (ANOVA)

method. The aim was to confirm whether there is a linear statistically significant relationship between the dependent variable (private universities' competitiveness) and collaboration networks. Bryman & Bell (2022) corroborate that a p-value less than 0.05 in this context

suggests that a linear model is appropriate for analysing the variable relationships. Table 6 shows the results for linearity between private universities' competitiveness and the explanatory variable.

Table 6: ANOVA Test for Linearity

Variables	Sum of Squares	df	Mean Square	F	Sig.
Competitiveness * Collaboration Networks					
- Linearity	31.74	1	31.74	59.62	0.000

The table above shows all the p-values below the 0.05 threshold, indicating statistically significant linear relationships between the private university competitiveness of the explanatory variable. Linear associations were confirmed between private universities' competitiveness and Collaboration Networks (F = 59.05, p < 0.01).

Multicollinearity Test

The Variance Inflation Factor (VIF) and Tolerance Test were used to assess multicollinearity, and the results are tabulated below.

Table 7: Multicollinearity Diagnostics (N = 70)

Collaboration Networks	(VIF)	Tolerance Test
Internal departmental collaboration	1.74	0.575
Interdepartmental collaboration	1.61	0.621
Strategic partnerships	1.53	0.654
Alumni Collaboration	1.87	0.535
Stakeholder collaboration	1.58	0.633

The table shows that all VIF values are between 1.53 and 1.87, well below the critical threshold of 5.0 (Cooper & Schindler, 2020), conventionally used to detect harmful multicollinearity. Tolerance values are all > 0.1, confirming sufficient independence among predictors (Robson & McCartan, 2021). These results confirm that no serious multicollinearity exists across the CRM dimensions and each independent variable contributes unique explanatory power to competitiveness. Hence, the

CRM constructs and their variables are statistically sound and safe for use in multiple linear regression analysis and SEM (Structural Equation Modelling).

Heteroscedasticity

To detect heteroscedasticity in the residuals, the Breusch-Pagan test was conducted, with findings shown in the table below.

Table 8: Breusch-Pagan Test for Heteroscedasticity on CRM (N = 70)

CRM Dimension / Variable	Test Statistic (χ^2 / LM)	df	p-value
CRM Collaboration & Competitiveness	7.85 (χ^2)	7	0.347

Table 8 reveals the p-values are above 0.05, indicating no violation of the homoscedasticity assumption. The p-value was 0.347, indicating that the null hypothesis of homoscedasticity cannot be rejected. Therefore, it is concluded that there is no significant heteroscedasticity in the model. This aligns with standard regression diagnostic practice, where a p-value greater than 0.05 indicates no statistically significant evidence of unequal error variances, suggesting that the assumption of constant variance across residuals is not violated. This

outcome validates the assumption of homoscedasticity, essential for ensuring reliable standard errors and hypothesis testing in regression models (Cooper & Schindler, 2020).

Autocorrelation Test

The Durbin-Watson statistic was used to test autocorrelation in CRM Collaboration Networks predictors in relation to private universities' competitiveness.

Table 9: Autocorrelation for CRM Dimensions (N = 70)

CRM Dimension	Durbin-Watson (DW)
CRM Collaboration Networks	2.01
Competitiveness	1.82

Table 9 indicates there was no significant autocorrelation in the CCRM variables. A Durbin-Watson value of 2.01 was obtained, which lies within the acceptable limits of 1.5 to 2.5 (Creswell & Creswell, 2023). This suggests that the residuals are

private universities in Kenya, Pearson correlation analysis was conducted. Pearson correlation coefficient (r) analysis provides a measure of the strength and direction of the linear relationship between two variables, ranging from -1 (perfect negative correlation) to +1 (perfect positive correlation). This method is useful for identifying preliminary associations among variables prior to regression and structural equation modelling analysis. The results are tabulated below.

Pearson Correlation Analysis

To examine the linear relationship between CRM collaboration networks and the competitiveness of

Table 10: Correlation of CRM Collaboration Networks (CRMCN) with Other Variables

Variable	Pearson Correlation	Strength	Significance
Firm Competitiveness (FC)	0.571	Moderately strong positive	Significant (p < 0.01)
CRM Policies (CRMP)	0.605	Strong positive	Significant (p < 0.01)
CRM Technologies (CRMT)	0.629	Strong positive	Significant (p < 0.01)
CRM Service Delivery (CRMSD)	0.648	Strong positive	Significant (p < 0.01)
Institutional Factors (IF)	0.689	Strong positive	Significant (p < 0.01)

The Pearson correlation results indicate that Customer Relationship Management Collaboration Networks (CRMCN) have a positive and statistically significant relationship ($p < .01$) with all the variables examined. This suggests that as organisations, including private universities, strengthen their collaborative CRM structures, there is a corresponding improvement in CRM policies, technological adoption, service delivery, institutional support, and ultimately, firm competitiveness.

Among the variables analysed, the strongest correlation is found between CRMCN and Institutional Factors ($r = .689$), indicating that the broader regulatory, cultural, and industrial contexts play a pivotal role in fostering effective CRM collaboration. This suggests that external institutional conditions such as government regulations, accreditation requirements, and market expectations significantly influence how CRM strategies are adopted and implemented within organisations. These insights align with Institutional Theory, which posits that organisations are influenced and often constrained by their external environments, including normative and coercive pressures (DiMaggio & Powell, 1983).

CRM Service Delivery ($r = .648$) and CRM Technologies ($r = .629$) also show strong positive associations with CRMCN. These results suggest that organisations with mature CRM collaboration networks are more likely to exhibit enhanced service responsiveness and operational efficiency. This result aligns with previous research showing that technology integration and interdepartmental collaboration greatly enhance service quality and responsiveness (Seeman & O'Hara, 2006; Payne & Frow, 2005). The relationship between CRMCN and service delivery also reflects established service quality literature, which demonstrates that higher service quality is strongly associated with improved customer satisfaction and positive behavioural outcomes such as loyalty and retention (Zeithaml et al., 1996).

The correlation between CRMCN and CRM Policies ($r = .605$) further reinforces the importance of internal governance, strategy, and alignment. Well-structured CRM policies enhance coordination across departments and promote consistency in customer-facing activities. Such policy frameworks are instrumental in aligning institutional objectives with customer engagement goals. This resonates with the principles of CRM Theory, particularly as defined by Buttle (2021), who emphasises the centrality of strategic planning and policy

formulation in driving CRM effectiveness. Although slightly lower in strength, the relationship between CRMCN and Firm Competitiveness ($r = .571$) remains statistically significant. This result suggests that collaborative CRM structures contribute meaningfully to an organisation's market positioning by enabling data-driven, customer-centric, and agile operations. From a theoretical perspective, this finding is congruent with the Resource-Based View (RBV), which considers organisational capabilities such as CRM-related collaboration, information systems, and cross-functional coordination as strategic assets that enhance firm performance (Barney, 1991). Within the context of private universities, this supports the notion that CRM contributes to competitiveness by fostering personalised student interactions, improving recruitment and retention outcomes, and strengthening institutional appeal (Hennig-Thurau et al., 2001).

Moreover, these outcomes align with Relationship Marketing Theory, which advocates for sustained, long-term engagement over transactional exchanges (Morgan & Hunt, 1994). Universities that embrace service-oriented CRM policies and cultivate collaborative internal cultures are more likely to achieve high levels of student satisfaction and loyalty (Hennig-Thurau et al., 2001). Such alignment with both customer expectations and institutional missions supports the development of a competitive edge in increasingly dynamic educational markets. CRM Collaboration Networks are strongly and positively correlated with all key dimensions of CRM, such as policies, technologies, and service delivery, as well as institutional factors and firm competitiveness. Notably, institutional factors, service delivery, and technological integration appear to be the most influential elements in driving CRM collaboration. These findings underscore the central role of collaboration within the broader CRM ecosystem and reinforce its strategic importance for enhancing organisational effectiveness and gaining a competitive advantage, particularly in service-oriented sectors such as higher education.

Coefficient Estimates for the Effect of CRM Collaboration Networks on Competitiveness of Private Universities

Table 11 below presents the results of the analysis of Coefficient Estimates for the Effect of CRM Collaboration Networks on Competitiveness of Private Universities.

Table 11: Coefficient Estimates; CRM Collaboration Networks on Competitiveness (N = 70)

Predictor	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig. (p)
(Constant)	0.678	0.149	–	4.55	0.000
Internal Collaboration	0.24	0.083	0.27	2.89	0.005
Interdepartmental Collaboration	0.11	0.083	0.13	1.32	0.192
Alumni Collaboration	0.18	0.078	0.21	2.31	0.024
Partnership Collaboration	0.09	0.083	0.10	1.08	0.283
External Collaboration	0.16	0.078	0.19	2.05	0.045

Dependent Variable: Competitiveness of Private Universities where:

- IC = Internal Collaboration
- IDC = Interdepartmental Collaboration
- AC = Alumni Collaboration
- PC = Partnership Collaboration
- EC = External Collaboration
- The model can be expressed as:

$$CPU = 0.678 + 0.24IC + 0.11IDC + 0.18AC + 0.09PC + 0.16EC + 0.149$$

As shown in Table 11, internal departmental collaboration emerged as the strongest significant predictor ($\beta = .24, p = .005$), and alumni engagement ($\beta = .018, p = .024$) were also statistically significant predictors, indicating that both internal institutional coordination and alumni relationship networks contribute to improved organisational competitiveness. External stakeholder collaboration was marginally significant ($\beta = .16, p = .045$), suggesting moderate influence. Conversely, interdepartmental collaboration and strategic partnerships did not significantly predict competitiveness ($p > .05$), indicating these areas may be underutilised or lack effective CRM integration.

Table 12: Multiple Linear Regression Summary Model (N=70)

R	R ²	Adjusted R ²	F	Sig.
0.782	0.453	0.580	19.76	.000

The results of the summary model of multiple linear regression analysis in the table above revealed a statistically significant model, $F(7, 70) = 19.76, p < .05$, with an R^2 value of .611, indicating that approximately 61.1 per cent of the variance in university competitiveness was explained by CRM collaboration network predictors.

Hierarchical Regression Analysis

The table below presents the results of a hierarchical multiple regression analysis evaluating the combined effects of internal and external CRM collaboration strategies on institutional competitiveness among private universities in Kenya.

Table 13: Hierarchical Regression Analysis Table

Block	Predictors	R	R ²	ΔR ²	Adjusted R ²	F	Sig. Change
1	Internal departmental collaboration and Alumni engagement	0.515	0.353	—	0.494	26.23	.000
2	+ Interdepartmental, partnerships and External collaboration	0.582	0.453	0.100	0.580	19.76	.000

The first block included predictors such as internal departmental collaboration, alumni engagement, and access to career services. These internal CRM collaboration network predictors significantly explained 35.3 per cent of the variance in competitiveness, $R^2 = .353$, $F(3, N) = 26.23$, $p < .001$. When external collaboration network predictors interdepartmental collaboration, strategic partnerships and external collaboration were added in block 2, the model improved significantly, with an additional 10 per cent of variance explained, $\Delta R^2 = .100$, F change = 19.76, $p < .05$, resulting in a total R^2 of .453. This suggests that while internal collaboration CRM strategies form a critical foundation, integrating broader external networks enhances competitiveness.

Thus, external factors improved the model's explanatory power, though they did not significantly predict

competitiveness ($p > .05$). These findings reinforce the view that internal collaboration CRM capacities, when strategically expanded through effective external networks, can provide a competitive edge in the higher education sector (Seeman, 2006).

Structural Equation Modelling (SEM)

SEM was conducted using AMOS (v29) to confirm the structural relationship of the model fitness, path coefficients and to test the reliability of the hypothesised relationships between CRM collaboration networks and institutional competitiveness.

Structural Equation Model (SEM) Fit Indices

The table below presents the results of SEM fit indices of the structural relationship between CRM collaboration networks and the competitiveness of private universities in Kenya.

Table 14: Structural Equation Model (SEM) Fit Indices (N = 70)

Fit Index	Value	Threshold	Interpretation
Comparative Fit Index (CFI)	0.935	> 0.90	Good fit
Tucker-Lewis Index (TLI)	0.911	> 0.90	Good fit
Root Mean Square Error of Approximation (RMSEA)	0.037	< 0.08	Acceptable error
Chi-Square/df (CMIN/df)	1.86	< 3.00	Acceptable ratio
Standardized RMR (SRMR)	0.041	< 0.08	Acceptable residual error

Note: All criteria meet accepted SEM fit standards

Model fit was confirmed by the indices, as the CFI (0.935) and TLI (0.911) exceeded the recommended 0.90 level, and both RMSEA (0.037) and SRMR (0.041) were below the acceptable cutoff of 0.08 (Creswell & Creswell, 2023). These values suggest that the proposed

structural model fits the data well, reflecting reliable measurement of the hypothesised relationships between CRM constructs and institutional competitiveness. The path coefficients of the CRM collaboration networks to competitiveness are statistically significant, confirming

the direct influence of CCRM on institutional competitiveness. This supports earlier findings in multiple regression analysis on the positive role of CCRM in enhancing performance outcomes in private universities in Kenya.

Structural Path Coefficients

The standardised path coefficients demonstrated significant positive relationships between each CRM construct and institutional competitiveness, as shown in Table 15 below.

Table 15: Standardised SEM Path Coefficients (N = 70)

Path	Unstandardized Estimate (β)	S.E.	C.R. (t-value)	p-value
CRM Collaboration → Institutional Competitiveness	0.19	0.07	3.38	.002

*p < .005 (Statistically significant)

The SEM Path diagram illustrates the direct impact of CRM collaboration networks on Institutional Competitiveness. CRM collaboration networks ($\beta = .19$). The path is statistically significant ($p < .05$). This finding confirms the multiple regression analysis. indicated that effective stakeholder networks, particularly with the alumni, faculty and industry partners, moderately contribute to the competitiveness of private universities.

Pearson correlation coefficient indicates that CRM collaboration networks (CCRM) have strong, positive, and significant correlations with firm competitiveness ($r = .571, p < .01$), suggesting that well-established collaborative networks enhance CRM effectiveness and contribute to higher organisational competitiveness. Key benefits of CRM collaboration networks include strengthened alumni engagement via mentorship and fundraising programs, improved student access to internships and job opportunities, better cross-departmental coordination, and the development of strategic partnerships with industry and NGOs.

Thematic Analysis

This section explores perceptions and experiences regarding the functionality and implementation of CRM collaboration networks (CCRM) on the competitiveness of private universities in Kenya from 17 focus group discussions with student leaders and 34 interviews conducted with university registrars and Deans of Students.

A prominent theme across both student and administrative participants was the strength of internal collaboration, particularly within academic departments. Students consistently reported that departmental staff and faculty were accessible and responsive to both academic and personal concerns. Communication channels such as

departmental WhatsApp groups, academic advisory sessions, and peer mentorship initiatives were widely acknowledged. One student leader stated, "We can always talk to our head of department or our course reps. If there is an issue, it's handled within the department quickly. However, while internal engagement appears robust, its formalisation through CRM platforms remains limited, potentially hindering data integration and institutional memory.

Despite strong departmental cohesion, interdepartmental collaboration was perceived as weak and fragmented. Student leaders frequently described experiences of being "bounced" between finance, registry, and academic offices. Registrars and Deans acknowledged that coordination is often department-specific and not integrated across administrative units. A registrar admitted, "Sometimes, we discover the same student has visited three offices for the same issue. We clearly need a unified system." These findings highlight the operational challenges created by fragmented service delivery and reinforce the need for integrated CRM systems that enable seamless information sharing across departments, eliminate duplication of effort, and improve institutional responsiveness and student experience.

Alumni engagement was universally described as event-driven and episodic, primarily focused on graduation ceremonies, reunions, and occasional fundraising. Deans of Students acknowledged they lacked structured CRM-based alumni databases and long-term engagement strategies. One Dean noted, "We mostly call on alumni during graduation or when we need support, but we don't maintain regular contact." Students similarly expressed limited awareness of alumni initiatives, suggesting a communication and strategic engagement gap. CRM systems used to maintain ongoing alumni relationships

enhance institutional branding, fundraising, and mentorship programs, thus contributing to long-term competitiveness (Rust et al., 2004; Pember et al., 2014).

A recurring theme was the sporadic nature of institutional partnerships with industries, government agencies, and other universities. The majority of registrars noted that collaborations were often initiated by individual administrators and lacked alignment with CRM platforms. A student shared, “I only heard about our MoU with an international university when one student went abroad. It’s not information we’re given.” These findings highlight a misalignment between strategic aspirations and operational implementation, where institutional partnerships are not effectively communicated or embedded within internal information systems, resulting in limited awareness and reduced visibility of such collaborations among stakeholders.

Collaboration with external stakeholders such as employers, media houses, sponsors, and community organisations was reported to be informal and poorly tracked. While institutional leaders expressed awareness of the importance of such engagement, they also admitted that CRM systems are not actively used to manage these relationships. The majority of the registrars and deans confirmed that universities partner with employers for internships, in a more informal and manual manner, not on CRM. Students also demonstrated limited knowledge of which organisations their universities were affiliated with, indicating a lack of communication and visibility. External collaborations are often shaped by normative and regulatory structures but require formal systems to support consistent engagement and strategic value (DiMaggio & Powell, 1983).

Data Triangulation

Quantitative results indicated that internal departmental collaboration and alumni relations were the most influential CCRM networks in enhancing institutional competitiveness. CCRM also demonstrated strong positive correlations ($r = .571$), explaining 45.3 per cent of the variance in competitiveness in the regression model. In contrast, interdepartmental collaborations and strategic partnerships recorded lower mean scores and non-significant predictive power, reflecting their limited strategic integration within CRM systems.

The qualitative findings substantiated these statistical trends. Focus group discussions and interviews revealed that internal CRM functionalities were perceived as robust, particularly within academic departments, where accessibility and responsiveness were highly valued. However, participants frequently reported inconsistent interdepartmental communication, episodic alumni engagement, and poorly structured external stakeholder relationships. CRM tools were largely underutilised for cross-functional collaboration and external engagement, often due to policy fragmentation, limited CRM training, and a lack of centralised leadership commitment.

Together, the converging evidence suggests that while internal CRM collaboration significantly contributes to institutional efficiency and student satisfaction, the broader strategic potential of CRM remains underexploited. This triangulated insight reinforces the position that data-driven CRM systems can foster personalised stakeholder engagement and institutional agility (Hillebrand et al., 2011). However, in the absence of integrated frameworks and leadership ownership, CRM platforms in private universities remain operationally fragmented, limiting their impact on competitiveness and long-term sustainability (Browning et al., 2021).

Table 16: Summary of Hypothesis Testing

Hypothesis	Result
Ho: CRM collaboration networks do not affect competitiveness	Rejected

The results above demonstrate that CRM collaboration networks significantly influence the competitiveness of private universities in Kenya. The SEM model confirms the theoretical assumptions and hypothesised relationships in the conceptual framework. The SEM

model provides strong evidence that CRM collaboration networks are a strategic lever for enhancing performance in private universities in Kenya.

Summary of Findings

CRM collaboration networks positively influenced the competitiveness of private universities in Kenya. These findings support Gulliver et al. (2021), who highlighted that collaborative CRM ecosystems are performance enhancers in any institution. Quantitative analyses revealed strong and statistically significant relationships between CRM collaboration networks and competitiveness ($M=3.57$, $r=0.571$, $\beta=0.189$, $p=.001$). Hence, a unit change in CRM collaboration networks while holding other factors constant will affect competitiveness by 0.189 units. The regression model reveals that 45.3 per cent of the variation in competitiveness can be explained by CRM collaboration networks. Structural path coefficient confirmed the results ($\beta=0.19$, $p=.000$). Thus, the null hypothesis, H_0 : CRM collaboration networks do not statistically affect competitiveness, was rejected.

CRM collaboration network predictors, such as internal department collaboration ($M=4.09$, $r=.64$) and career services ($M=3.93$, $r=.660$), showed strong means and correlations, indicating that these collaborative structures are positively associated with improved institutional performance through enhanced coordination, communication, and service delivery across functional units. However, interdepartmental collaboration and external partnerships in areas of exchange programs, international outreach and joint research scored least and were not statistically significant.

Nonetheless, external collaboration with alumni, industry partners, and research networks is underdeveloped. Administrators admitted that alumni data was underutilised beyond fundraising, and students were largely unaware of partnership opportunities. One administrator noted, "We have alumni data, but rarely use it beyond fundraising events." This gap aligns with Relationship Marketing Theory's advocacy for long-term mutual value creation through stakeholder engagement (Morgan & Hunt, 1994).

The study also aligns with CRM Theory, which emphasises the use of technology and customer-centric strategies to foster collaborations and long-term value (Buttle, 2021). However, weak alumni integration and underutilised partnerships highlight gaps in strategic collaboration, echoing SERVQUAL's responsiveness and empathy dimensions as areas needing improvement (Zeithaml et al., 1996). Literature supports that well-structured CRM ecosystems improve communication,

satisfaction, and personalised service (Mithas et al., 2005). Therefore, private universities can fully leverage CRM collaboration networks by strengthening policy frameworks, training, and stakeholder integration to drive long-term growth and institutional competitiveness.

CONCLUSION AND RECOMMENDATIONS

Conclusion: The study concludes that CRM collaboration networks are key mechanisms for institutional competitiveness, especially through administrative responsiveness, multichannel communication and targeted support services such as career development. Collaboration networks are largely effective internally but underutilised externally in areas like strategic partnerships, research initiatives, exchange programs and managing joint programs and alumni. This misalignment underscores the need for a more expansive and integrated CRM strategy that includes external stakeholder engagement and ecosystem-level collaboration, in line with CRM and Relationship Marketing theories.

A cross-functional implementation model that encourages collaboration between departments such as ICT, admissions, marketing, academic, co-curricular, and non-academic units is essential to avoid operational silos and ensure uniformity in CRM adoption. Such alignment reflects the principles of Relationship Marketing Theory, which emphasises internal cohesion, coordinated processes, and sustained stakeholder engagement as key foundations for building long-term relationships and achieving competitive advantage.

Recommendation: Private universities should prioritise participatory design strategies in evaluating the effectiveness of CRM platforms and systems. It should engage students, staff and other stakeholders in system design, deployment, use and refinement. Students are the primary beneficiaries of CRM-driven services; thus, their input offers valuable insights for system adoption, usability and service personalisation. Feedback loops and participatory strategies, such as student-led focus groups and usability testing, should be done as standard components of CRM rollouts. Appropriate feedback mechanisms should be entrenched in CRM systems to enable continuous service quality improvements. Martin et al. (2024) acknowledged that developing a formal feedback loop CRM-specific policy can enhance system improvement, sustainability and data governance.

The institutions should also adopt CRM as a catalyst for external engagement and institutional visibility. CRM-driven initiatives such as employer partnerships, alumni mentoring programs, and collaborative research networks should be formalised through CRM systems. These activities not only enhance student opportunities but also support long-term institutional branding and resource mobilization. When CRM is applied to both internal services and external relationship-building, it becomes a strategic lever for institutional sustainability.

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