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## Moderating Effect of Institutional Factors on the Relationship Between Customer Relationship Management (CRM) and Competitiveness of Private Universities in Kenya

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### Abstract

This study examined the moderating effect of institutional factors on the relationship between Customer Relationship Management (CRM) strategies and the competitiveness of private universities in Kenya. The specific objectives were to assess the moderating effect of organisational culture, leadership commitment, institutional resources, staff buy-in, and technological readiness on the CRM–competitiveness relationship. The study was guided by CRM Theory, Relationship Management Theory (RMT), and the SERVQUAL model, which informed the interpretation of how institutional readiness shapes service quality, relational value, and institutional performance. A cross-sectional descriptive design was adopted. The target population comprised 36 private universities in Kenya, while the study sample included 204 respondents drawn from 17 universities using stratified, purposive, and convenience sampling. Data were collected using questionnaires, interviews, and focus group discussions. Quantitative data were analysed using descriptive and inferential statistics, while qualitative data were analysed thematically. Findings revealed that institutional factors significantly moderated the relationship between CRM strategies and competitiveness. Moderated regression and PROCESS Macro Model 1 confirmed that institutional support strengthens the CRM–competitiveness relationship with an interaction term ( $\beta = 0.162, p = .030$ ). The model explained 63.2 per cent of the variance in competitiveness. The study concludes that CRM effectiveness depends on both technological systems and institutional readiness, particularly leadership, culture, and resource capacity. It recommends strengthening institutional capacity to fully leverage CRM for competitiveness in private universities.

**Key words:** Customer relationship management, institutional resources, leadership support, organisational culture, staff buy-ins, strategies and competitiveness.



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## INTRODUCTION

Customer Relationship Management (CRM) has increasingly become a central strategic tool for enhancing institutional performance and competitiveness in higher education institutions. Empirical evidence indicates that CRM systems enable universities to streamline student engagement processes, improve communication efficiency, enhance service delivery, and strengthen long-term relationships with students and other stakeholders (Soltani, 2018; Dewnarain, 2019). These capabilities are particularly important in competitive higher education markets where institutions are required to differentiate themselves through improved student experience, responsiveness, and institutional efficiency (Hennig-Thurau et al., 2021; Khan et al., 2022).

In recent years, CRM adoption in universities has expanded beyond administrative automation to include comprehensive student lifecycle management, alumni relations, and data-driven decision-making systems. Studies show that when effectively implemented, CRM systems contribute to improved student satisfaction, retention, engagement, and institutional performance (Tight, 2020; Hossain, 2022). However, the effectiveness of CRM is not uniform across institutions, as outcomes vary significantly depending on contextual and organisational conditions under which these systems are implemented.

Institutional factors such as organisational culture, leadership commitment, resource availability, staff buy-in, and technological readiness play a critical role in shaping the success of CRM initiatives in higher education institutions. Evidence suggests that institutions with supportive leadership, adequate infrastructure, and a strong customer-oriented culture are more likely to translate CRM investments into improved competitiveness and service delivery outcomes (Sdravopoulou, 2021). Conversely, weak institutional support systems often limit the effectiveness of CRM systems, even where technological investments are substantial (Hossain, 2022).

In the Kenyan higher education context, private universities operate in a highly competitive and resource-constrained environment characterised by increasing demand for quality services, technological transformation, and accountability in service delivery. While many institutions have adopted CRM systems,

their effectiveness in enhancing competitiveness remains uneven, suggesting that institutional conditions may significantly influence outcomes (Government of Kenya, Ministry of Education, 2024; Mwangi et al., 2025). This raises critical questions regarding why some universities achieve stronger competitive gains from CRM implementation while others do not, despite similar technological adoption.

Despite substantial investment in CRM systems by private universities in Kenya, evidence suggests that the expected gains in competitiveness—such as improved student satisfaction, retention, operational efficiency, and market positioning—remain inconsistent across institutions (Government of Kenya, Ministry of Education, 2024). While CRM systems are widely adopted, their effectiveness varies significantly, indicating that technology alone does not guarantee competitive advantage (Mwangi et al., 2025).

Empirical studies increasingly recognise that institutional factors play a critical role in shaping CRM outcomes. However, most existing research in higher education has focused primarily on direct relationships between CRM and performance outcomes, with limited attention to moderating mechanisms that explain variations in effectiveness (Soltani, 2018; Obal & Morgan, 2023). In particular, there remains a fragmented understanding of how organisational culture, leadership commitment, institutional resources, staff buy-in, and technological readiness jointly influence the CRM competitiveness relationship in private universities.

This gap is more pronounced in the Kenyan context, where private universities operate under resource constraints, increasing competition, and varying levels of technological maturity. As a result, some institutions successfully leverage CRM to enhance competitiveness, while others experience limited returns despite similar investments. The absence of a clear empirical model explaining how institutional factors moderate CRM effectiveness presents a significant knowledge gap.

Therefore, this study addresses this gap by examining the moderating effect of institutional factors—including organisational culture, leadership commitment, institutional resources, staff buy-in, and technological readiness—on the relationship between CRM strategies and competitiveness of private universities in Kenya.

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The general objective of the study is to explore the moderating effect of institutional factors on the relationship between CRM strategies and the competitiveness of private universities in Kenya. Specifically, the study seeks to examine the moderating effect of organizational culture on the relationship between CRM strategies and the competitiveness of private universities in Kenya, determine the moderating

effect of leadership commitment on the relationship between CRM strategies and the competitiveness of private universities in Kenya, assess the moderating effect of institutional resources on the relationship between CRM strategies and the competitiveness of private universities in Kenya, analyze the moderating effect of staff buy-in on the relationship between CRM strategies and the competitiveness of private universities in Kenya, and evaluate the moderating effect of technological readiness on the relationship between CRM strategies and the competitiveness of private universities in Kenya.

The study is guided by the following hypothesis:  $H_0$ : Institution factors do not significantly moderate the relationship between CRM and competitiveness of private universities in Kenya.

### LITERATURE REVIEW

CRM is widely recognised as a strategic capability that enhances service delivery, student engagement, and institutional performance in higher education. Empirical evidence indicates that CRM improves responsiveness, communication efficiency, and relationship continuity across the student lifecycle, thereby contributing to institutional competitiveness (Soltani, 2018; Dewnarain, 2019). Further studies demonstrate that CRM enhances student satisfaction, retention, and loyalty when effectively embedded within institutional processes (Tight, 2020; Hossain, 2022). However, despite these positive outcomes, research consistently shows variation in CRM effectiveness across institutions, suggesting that internal institutional conditions may influence its impact (Buttle, 2021).

This variation is theoretically supported by CRM Theory, which emphasizes integrated systems for managing long-term stakeholder relationships (Buttle, 2021), Relationship Marketing Theory, which highlights trust and commitment as drivers of relational performance (Morgan & Hunt, 2020), and the SERVQUAL Model, which links service quality dimensions—reliability, responsiveness, assurance, empathy, and tangibles—to institutional performance outcomes (Zeithaml et al., 2021). Collectively, these frameworks imply that CRM effectiveness is not purely technological but contingent on institutional conditions that shape service quality delivery and relational engagement.

The literature increasingly suggests that institutional factors condition the strength of the CRM–

competitiveness relationship rather than acting as direct predictors alone. Organisational culture, for instance, influences the extent to which CRM is internalised and sustained within institutions. A customer-oriented and innovation-driven culture enhances CRM adoption and integration, while weak cultures limit its effectiveness (Wang & Ahmed, 2004). Similarly, leadership commitment plays a critical moderating role by aligning CRM with strategic institutional goals, ensuring resource allocation, and fostering cross-functional collaboration. In contexts where leadership support is weak, CRM systems tend to remain underutilised, reducing their competitive impact.

Institutional resources and technological readiness also moderate CRM effectiveness by determining system reliability, scalability, and service responsiveness. Universities with adequate financial, human, and ICT infrastructure are better able to translate CRM investments into improved service delivery and competitiveness (Pereira & Oliveira, 2022). Conversely, resource-constrained institutions experience system inefficiencies and fragmented implementation, weakening CRM outcomes.

Staff buy-in and competency further influence the CRM–competitiveness relationship by shaping system utilisation and data quality. Studies show that when staff possess adequate digital skills and demonstrate willingness to adopt CRM systems, institutions achieve higher levels of service integration and performance improvement (Khan et al., 2022). Resistance or limited competence, however, leads to underutilization and weak system impact.

The regulatory environment also plays a moderating role by shaping compliance requirements and data governance practices. In Kenya, the Data Protection Act (2019), Commission for University Education standards, and Ministry of Education guidelines influence how CRM systems are implemented, particularly in relation to data (Government of Kenya, Ministry of Education, 2024). Compliance requirements can strengthen CRM legitimacy but may also impose operational constraints that affect system flexibility and performance outcomes.

Although existing studies confirm that CRM contributes to improved institutional performance, most research focuses on direct effects, with limited integration of moderating mechanisms (Soltani, 2018; Obal & Morgan,

2023). This reflects a conceptual gap in explaining why CRM yields uneven competitiveness outcomes across similar institutions. Additionally, empirical studies rarely integrate organisational culture, leadership, resources, staff buy-in, and technological readiness within a unified moderating framework. In the Kenyan context, this gap is more pronounced due to institutional heterogeneity, resource constraints, and varying technological maturity across private universities (Mwangi et al., 2025).

Overall, the literature indicates that CRM alone does not guarantee competitiveness in higher education institutions. Its effectiveness is significantly shaped by institutional conditions that function as moderating variables. Organisational culture determines internal adoption dynamics, leadership commitment drives strategic alignment, institutional resources and technological readiness enable system functionality, and staff buy-in ensures operational effectiveness. However, empirical evidence remains fragmented and largely focused on direct relationships, leaving a critical gap in understanding the combined moderating effect of institutional factors. This study addresses this gap by empirically examining how these institutional variables jointly moderate the relationship between CRM strategies and the competitiveness of private universities in Kenya.

### METHODOLOGY

This study adopted a positivist paradigm with a pragmatic orientation, consistent with mixed methods research approaches that combine numerical measurement with contextual interpretation (Bell et al., 2022; Creswell & Creswell, 2023). A convergent mixed-methods design was used, where quantitative and qualitative data were collected concurrently, analysed independently, and integrated during interpretation to enhance triangulation and validity (Creswell & Creswell, 2023; Robson & McCartan, 2021). A cross-sectional descriptive survey design was employed to examine the moderating effect of institutional factors on the relationship between CRM strategies and competitiveness of private universities in Kenya, consistent with CRM-related higher education studies (Soltani, 2018).

The target population comprised 36 private universities in Kenya (Government of Kenya, Ministry of Education, 2024). Respondents included registrars, deans of students' affairs, marketing managers, ICT managers, deans of schools, and student leaders, reflecting CRM

stakeholder engagement structures. A sample of 17 universities and 204 respondents was selected using Cochran’s formula, aligning with established sampling procedures in business research (Mwangi et al., 2025). Stratified sampling categorised universities, purposive sampling selected key administrative respondents, while simple random and convenience sampling were applied within strata (Saunders et al., 2019; Cooper & Schindler, 2020).

Data were collected using structured questionnaires, interview guides, and focus group discussions, consistent with CRM and higher education empirical studies (Khan et al., 2022). Instrument validity was ensured through expert review and factor analysis, while reliability was tested using Cronbach’s Alpha, consistent with multivariate analysis standards (Hair et al., 2014; Pallant, 2020). Quantitative data were analysed using SPSS version 29 through descriptive statistics, Pearson correlation, multiple regression, and moderated

regression (PROCESS Macro), in line with CRM performance studies (Obal & Morgan, 2023). Qualitative data were analysed thematically to identify patterns and contextual meanings (Neuman, 2020).

Ethical considerations followed established research protocols, including informed consent, confidentiality, anonymity, and voluntary participation, with approval obtained from institutional authorities and NACOSTI (Robson & McCartan, 2021; Creswell & Creswell, 2023).

**FINDINGS AND DISCUSSION**

**Data Analysis, Presentation and Interpretation**

The data was cleaned, prepared and coded to identify any missing or incomplete responses and detect the outliers.

**Response Rate and Composition**

Discussion should be focused, blending literature review, theory and results.

**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 was used to assess the internal consistency of CRM policies constructs.

**Table 2: Cronbach's Alpha Coefficient (N=70)**

| Focus / Construct     | Cronbach’s Alpha | No. of Items |
|-----------------------|------------------|--------------|
| Institutional Factors | 0.873            | 5            |

The table indicates that good internal consistency was yielded by a Cronbach’s Alpha of over 0.873. This indicates a high level of internal consistency among the items. According to Neuman (2020), a value of  $\alpha \geq 0.7$  is acceptable, and values above 0.8 reflect strong reliability in social science research.

**Factor Analysis for Institutional Factors Influencing CRM Implementation**

An Exploratory Factor Analysis (EFA) was conducted to identify the underlying institutional factors that influence the adoption, implementation, and effectiveness of CRM initiatives in enhancing the competitiveness of private universities in Kenya. The analysis focused on five hypothesised constructs: government policy, organisational culture, leadership commitment, and institutional resources and staff buy-ins. The suitability



of the data for factor analysis was tested using the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett’s Test of Sphericity. The outcomes are summarised below.

**Table 3: Factor Analysis**

| Institutional Factor Items | Component (Factor Loadings) |
|----------------------------|-----------------------------|
| Technological Readiness    | 0.795                       |
| Organization culture       | 0.837                       |
| Leadership commitment      | 0.872                       |
| Institutional resources    | 0.869                       |
| Staff buy-ins              | 0.844                       |

**Table 4: Total Variance Explained**

| Component             | Initial Eigenvalue | % Of Variance | Cumulative % |
|-----------------------|--------------------|---------------|--------------|
| Institutional Factors | 3.551              | 71.02%        | 71.02%       |

**Table 5: KMO and Bartlett’s Test**

| Measure  | Value   |
|--|---------|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy    | 0.814   |
| Bartlett’s Test of Sphericity (Approx. Chi-Square) | 394.726 |
| df   | 10      |
| Sig.   | 0.000   |

The KMO value of 0.814 confirmed that the data were suitable for factor analysis. Additionally, Bartlett’s Test of Sphericity was significant ( $\chi^2 = 394.726$ ,  $df = 10$ ,  $p < 0.05$ ), indicating adequate intercorrelations among the variables. Principal Component Analysis (PCA) with Varimax rotation extracted a strong component, which had an eigenvalue of 3.551, accounting for 71.02 per cent of the total variance. This suggests a high degree of interrelatedness among institutional factors, collectively influencing the implementation and adoption of CRM initiatives.

All five items demonstrated strong factor loadings, ranging from 0.795 to 0.872, well above the recommended threshold of 0.50 (Hair et al., 2014). These

findings confirm that all the measured items validly represent the broader construct of institutional factors.

The analysis reveals that institutional factors form a unified and significant component influencing CRM adoption and implementation. The key dimensions—leadership support, organisational culture, availability of resources, staff buy-in, and technological readiness—must be strategically managed to ensure successful CRM integration that enhances competitiveness in private universities.

**Descriptive Statistics on Moderating Variables**

The table below presents the extent to which the five institutional factors moderate CRM on the competitiveness of private universities in Kenya.

**Table 6: Descriptive Statistics for the Institutional Factors (N= 70)**

| Factor                  | Mean | Standard Deviation (SD) |
|-------------------------|------|-------------------------|
| Technological Readiness | 4.21 | 0.81                    |
| Organizational culture  | 4.07 | 0.88                    |
| Leadership commitment   | 4.47 | 0.67                    |
| Institutional resources | 4.55 | 0.58                    |
| Staff buy-in            | 4.01 | 0.76                    |

All factors scored above 4.0. This indicates that institutional factors influence leveraging CRM on the

competitiveness of private universities to a great and very high extent. Institutional resources and capacity, and

leadership commitment emerged as the strongest enablers.

These findings align with relationship marketing theory, which emphasises the critical role of resources, organisational culture and leadership in nurturing long-term customer relationships and sustaining competitive advantage.

They are also consistent with studies by the Higher Education Policy Institute (2020) on the role of technological readiness in shaping CRM effectiveness. They also emphasised the importance of staff buy-in

while adopting CRM Systems in Kenyan private universities.

**Normality Test of Study Variables**

To ensure the appropriateness of parametric statistical procedures such as regression and correlation, normality tests were conducted using the Shapiro-Wilk test, Skewness and Kurtosis statistics across the institutional factors. According to Bell et al. (2022), values of skewness within  $\pm 2$  and kurtosis within  $\pm 7$  are considered acceptable for the assumption of normality. A Shapiro-Wilk test p-value greater than 0.05 is considered within the recommended threshold (Neuman, 2020).

**Table 7: Shapiro-Wilk, Skewness and Kurtosis Normality Test Results (N = 70)**

| Variable Category     | Variable                | Shapiro-Wilk (p) | Skewness | Kurtosis |
|-----------------------|-------------------------|------------------|----------|----------|
| Institutional Factors | Technological readiness | 0.061            | -0.21    | -0.86    |
|                       | Organizational culture  | 0.074            | -0.47    | -0.25    |
|                       | Leadership commitment   | 0.055            | -1.20    | 1.75     |
|                       | Institutional resources | 0.081            | -1.58    | 3.05     |
|                       | Staff buy-ins           | 0.052            | -0.39    | -0.30    |

The results indicate that most variables across all constructs fall within the acceptable thresholds for normality.

**Multicollinearity Test**

A multicollinearity test was conducted using the Variance Inflation Factor (VIF) and the Tolerance Test. The results are tabulated below.

**Table 8: Multicollinearity Diagnostics Table (N = 70)**

| CRM Dimension         | Predictor Variable      | VIF  | Tolerance |
|-----------------------|-------------------------|------|-----------|
| Institutional Factors | Technological readiness | 1.42 | 0.703     |
|                       | Organizational culture  | 1.55 | 0.645     |
|                       | Leadership commitment   | 1.37 | 0.729     |
|                       | Institutional resources | 1.63 | 0.613     |

All VIF values are between 1.37 and 1.63, 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. Each predictor contributes unique moderating power to competitiveness. Hence,

institutional factors constructs and their variables are statistically sound and safe for use in multiple linear regression analysis and SEM.

**Heteroscedasticity**

The Breusch-Pagan test was conducted across all institutional factors to detect heteroscedasticity in residuals

**Table 9: Breusch-Pagan Test for Heteroscedasticity on CRM (N = 70)**

| CRM Dimension / Variable | Test Statistic ( $\chi^2$ / LM) | df | p-value |
|--------------------------|---------------------------------|----|---------|
| Institutional Factors    | 7.85 ( $\chi^2$ )               | 7  | 0.347   |

The results reveal the p-value is 0.347. It's above the critical threshold value of 0.05, indicating no violation of the homoscedasticity assumption in the model. This aligns with statistical guidelines provided by Pallant (2020), confirming that variance in residuals is stable across the data points if the p-values are above 0.05,

hence can be used for hypothesis testing in regression models.

**Autocorrelation Test**

The Durbin-Watson statistic was used to test autocorrelation in the CRM moderating factor and the competitiveness of private universities.

**Table 10: Autocorrelation for CRM Dimensions (N = 70)**

| CRM Dimension         | Durbin-Watson (DW) |
|-----------------------|--------------------|
| Institutional Factors | 1.96               |
| Competitiveness       | 1.82               |

Results indicate no significant autocorrelation. Durbin Watson statistics values of range between 1.82 and 1.96, which is within the acceptable range of 1.5 to 2.5 (Creswell & Creswell, 2023). This suggests the residuals are independent and the model is statistically sound and appropriate for inferential statistics.

key institutional variables were investigated: government policy, organisational culture, leadership commitment, institutional resources, and staff buy-in. The aim was to assess how institutional factors significantly moderate variations in competitiveness through CRM across private universities. The results are tabulated below.

**Multiple Linear Regression: The Moderating Effect of Institutional**

To determine the moderating effect of institutional factors on CRM and its impact on competitiveness, a multiple linear regression analysis was conducted. Five

**Regression Coefficients**

The table below presents the regression coefficients assessing the moderating effect of institutional factors on CRM in enhancing competitiveness in private universities.

**Table 11: Coefficient Estimates: Moderating Effect of Institutional Factors on CRM on Competitiveness (N = 70)**

| Predictor               | Unstandardized Coefficients (B) | Std. Error | Standardized Coefficients (Beta) | t    | Sig. (p) |
|-------------------------|---------------------------------|------------|----------------------------------|------|----------|
| (Constant)              | 0.742                           | 0.171      | —                                | 4.34 | 0.000    |
| Technological Readiness | 0.18                            | 0.085      | 0.21                             | 2.11 | 0.038    |
| Organizational Culture  | 0.15                            | 0.074      | 0.19                             | 2.02 | 0.046    |
| Leadership Commitment   | 0.21                            | 0.079      | 0.24                             | 2.65 | 0.010    |
| Institutional Resources | 0.29                            | 0.093      | 0.33                             | 1.72 | 0.003    |
| Staff Buy-in            | 0.16                            | 0.088      | 0.18                             | 3.12 | 0.064    |

a Dependent Variable: Competitiveness of Private Universities

Model Summary:

$$CPU = 0.742 + 0.18 + 0.15OC + 0.21LC + 0.29IR + 0.16SC + 0.171$$

Where:

- CPU = Competitiveness of Private Universities
- TR = Government Policy
- OC = Organisational Culture
- LC = Leadership Commitment
- IR = Institutional Resources
- SC = Staff Competence and buy-ins
- $\epsilon$  = Error Term (residuals)



The model revealed that institutional resources ( $\beta = .29$ ,  $p = .003$ ) were the strongest significant predictor, followed by leadership commitment ( $\beta = .21$ ,  $p = .010$ ). Technological readiness ( $\beta = .18$ ,  $p = .038$ ) and organisational culture ( $\beta = .15$ ,  $p = .046$ ) also

significantly contributed to the model. However, staff competence ( $\beta = .16$ ,  $p = .064$ ) was not statistically significant. Thus, the four constructs of institutional factors statistically influence competitiveness through CRM apart from staff buy-ins and competence.

**Table 12: Model Summary (N = 70)**

| R     | R <sup>2</sup> | Adjusted R <sup>2</sup> | F     | Sig. |
|-------|----------------|-------------------------|-------|------|
| 0.795 | 0.632          | 0.603                   | 22.44 | .000 |

The regression analysis revealed that institutional factors significantly moderate competitiveness in private universities in Kenya;  $R = .795$ ,  $R^2 = .632$ ,  $F(1, 5) = 22.44$ ,  $p < .05$ . The  $R^2$  value indicates that 63.2 per cent of the variance in competitiveness is moderated by institutional factors.

for effective CRM implementation (Zeithaml et al., 2021). Leadership commitment embodies assurance and empathy dimensions, fostering trust and loyalty. While staff competence and buy-ins showed borderline significance, this highlights the need for targeted CRM training programs and staff motivation to significantly improve service delivery. Professional development is essential to maximise CRM benefits in HEIs.

The findings are corroborated by Soltani, (2018), who affirmed that well-developed institutional factors are integral to competitive advantage in HEIs. CRM theory also emphasises the foundational role of institutional support and leadership commitment in fostering long-term relationships and service continuity. The SERVQUAL model posits that institutional resources enhance service reliability and responsiveness, critical

**Hierarchical Regression**

The results of a hierarchical regression analysis examining the incremental contribution of three predictor blocks—policy & culture, leadership & resources, and staff competence—on an outcome variable related to CRM effectiveness or student satisfaction.

**Table 13: Hierarchical Regression (N = 70)**

| Model Block | R <sup>2</sup> | $\Delta R^2$ | Sig. $\Delta F$ | Interpretation                                   |
|-------------|----------------|--------------|-----------------|--|
| Block 1     | 0.471          | —            | .000            | Base influence of technology readiness & culture |
| Block 2     | 0.593          | 0.122        | .004            | Leadership & resources add significant value     |
| Block 3     | 0.632          | 0.039        | .059            | Staff competence adds little additional value    |

A hierarchical regression analysis was conducted to assess the incremental moderating contribution of institutional factors on CRM outcomes in private universities. In the first block, technological readiness and culture significantly predicted the outcome variable,  $R^2 = .471$ ,  $p < .001$ , indicating a strong foundational influence. Introducing leadership and resource allocation in Block 2 resulted in a statistically significant  $\Delta R^2 = .122$ ,  $p = .004$ , raising the total variance explained to 59.3 per cent, suggesting that leadership commitment and proper resource allocation substantially enhance CRM effectiveness, aligning with findings by Dewnarain (2019) on the importance of institutional support in the successful implementation of CRM initiatives.

implying that staff capacity—though relevant—did not significantly improve the model beyond the foundational and structural factors. This pattern reflects principles of CRM theory, which emphasises that organisational infrastructure and strategic alignment form the backbone of CRM success (Buttle, 2021); while human resource factors like staff competence require institutional synergy to yield measurable impact (Sdravopoulou, 2021). This interpretation also aligns with Relationship Marketing Theory, which posits that systemic trust and commitment at policy and leadership levels are critical antecedents to long-term relational value in educational services (Morgan & Hunt, 2020).

However, the addition of staff competence and buy-ins in Block 3 produced only a marginal increase in  $R^2$  ( $\Delta R^2 = .039$ ), which was not statistically significant ( $p = .059$ ),

Moderated Regression Analysis and Hypothesis Testing  
Moderated regression analysis was conducted to examine whether institutional factors influence the strength of the relationship between CRM strategies and the

competitiveness of private universities in Kenya. Moderation regression analysis and Process Macro Modelling were conducted, and the results are tabulated below.

**Table 14: Moderated Regression Analysis (N = 70)**

| Interaction Term                       | Beta  | t-value | Sig.  |
|--|-------|---------|-------|
| CRM Strategies * Institutional Factors | 0.162 | 2.21    | 0.030 |

Institutional factors significantly moderate the relationship between CRM strategies and competitiveness ( $p = 0.03 < .05$ ).

Thus, the null hypothesis is rejected -Institutional factors do not have a significant moderating effect on the

relationship between CRM and the competitiveness of private universities in Kenya.

PROCESS Macro Model 1test was also conducted to confirm whether institutional factors moderate the effect of CRM on the competitiveness of private universities in Kenya.

**Table 15: PROCESS Macro Model 1test (N = 70)**

| Variable                                  | B (Unstandardized Coeff.) | SE    | t-value | p-value |
|---|---------------------------|-------|---------|---------|
| CRM dimensions                            | 0.412                     | 0.087 | 4.74    | 0.000   |
| Institutional Factors                     | 0.375                     | 0.093 | 4.03    | 0.000   |
| Interaction (CRM × Institutional Factors) | 0.162                     | 0.073 | 2.21    | 0.030   |

The results show that institutional factors moderate the effect of CRM on the competitiveness of private universities. Results indicated that the interaction between CRM and institutional factors is significant ( $\beta = 0.162, p = .030$ ) ( $p < .05$ ), suggesting that the relationship between CRM and competitiveness is strengthened when institutional factors are highly regarded.

These results confirm Pearson correlation findings that revealed that institutional factors exhibit strong and statistically significant correlations with all key CRM components. Institutional factors are also highly correlated with firm competitiveness ( $r = .701, p < .01$ ), suggesting a substantial role in shaping competitive outcomes. This implies that the institutional factors moderated the four CRM variables in influencing competitiveness.

Thus, institutional factors—such as leadership commitment, supportive culture, technological readiness, and resources—moderate the strength and effectiveness of CRM strategies. When institutional support is strong, CRM efforts are more likely to translate into improved competitiveness. This moderating effect is consistent across all CRM domains, indicating that CRM success is not solely dependent on internal strategies or technology, but also on the broader organisational and regulatory environment in which they are embedded (Obal & Morgan, 2023; Buttle, 2021).

**Data Triangulation**

Both quantitative and qualitative findings underscored leadership commitment and institutional resources as pivotal for CRM success, aligning with CRM theory’s emphasis on organisational commitment for strategic alignment and resource allocation (Buttle, 2021). Relationship Marketing theory further highlights leadership’s role in building trust and fostering sustainable relationships (Morgan & Hunt, 2020; Hennig-Thurau et al., 2021).

Conversely, organisational culture was identified as a major barrier. Resistance to change, unclear role definitions, and inadequate training were associated with lower service quality in reliability and responsiveness (Dewnarain, 2019; Khan et al., 2022), resonating with SERVQUAL theory's focus on communication clarity and staff competence (Andy & Len, 2021). Student feedback confirmed that leadership and resources influence CRM efficiency indirectly by affecting infrastructure and cultural readiness.

These findings affirm that without committed leadership and sufficient resources, CRM initiatives cannot achieve competitive advantage, corroborating prior studies linking institutional support to student satisfaction and retention (Tight, 2020). The integrated analysis advocates for a holistic approach combining leadership engagement, resource investment, staff capacity

development, and cultural adaptation to sustain CRM benefits (Soltani, 2018). These align with CRM theory's emphasis on strategic alignment and organisational readiness and SERVQUAL's assurance dimension.

### Summary of Findings

Institutional factors such as leadership commitment, organisational culture, and resource availability significantly moderated the relationship between CRM and competitiveness. PROCESS Macro Model test and Moderated Regression Analysis showed institution factors had a statistically significant moderating effect with the interaction term ( $r = \beta = .162$ ,  $p = .003$ ). Pearson correlation and regression analysis also indicated a strong and positive mediation relationship ( $r = 0.701$ ,  $\beta = .364$ ,  $p = .000$ ). Hence, a unit increase in institutional factors while holding other factors constant will enhance competitiveness by 0.364 units. The regression model reveals 63.2 per cent variation in competitiveness due to CRM can be explained by the mediation effect of institutional factors.

Multiple regression analysis identified institutional resources ( $\beta = .33$ ,  $p < .01$ ) and leadership commitment ( $\beta = .24$ ,  $p < .05$ ) as the most influential predictors. Hence, institutions with strong leadership involvement and adequate ICT resources demonstrated superior CRM outcomes. A participant remarked, "Where the VC supports CRM, you can see systems working and staff motivated," underscoring leadership's pivotal role. Conversely, resistance to change, unclear roles, and insufficient training impeded CRM effectiveness. These barriers align with literature emphasising organisational readiness as a prerequisite for CRM success and SERVQUAL's assurance and empathy dimensions (Snijders, 2020). Students also reported technological inadequacies, such as outdated systems and unreliable access, reinforcing the need for leadership-driven investment (Tight, 2020). Therefore, a holistic institutional framework that integrates leadership, infrastructure, and staff capacity is critical for CRM to realise its strategic potential.

This finding is well supported by both theoretical and empirical literature. Drawing from CRMT and RMT, successful CRM implementation depends not only on systems and strategies but also on contextual enablers such as leadership commitment, organisational culture, and resource adequacy (Buttle, 2021; Morgan & Hunt, 2020). These theories emphasise customer-centricity, co-

creation of value, and data-driven decision-making, all of which rely heavily on internal institutional capacity to be effective. SERVQUAL Theory complements this by linking CRM performance to service quality dimensions such as responsiveness, assurance, and empathy (Zeithaml et al., 2021), which are directly influenced by staff competency, ICT infrastructure, and a supportive institutional culture. Leadership-driven CRM initiatives, adequate financial (ICT) support and inclusive organisational environments significantly enhance competitiveness. The strategic value of CRM is fully actualised when internal institutional dynamics are aligned with CRM goals (Kamau et al., 2024). The findings propose a robust institutional framework that acts as a catalyst for transforming CRM efforts into measurable competitive advantage through improved student satisfaction, retention, and institutional reputation.

### CONCLUSION AND RECOMMENDATIONS

**Conclusion:** The study affirms that institutional factors, especially leadership commitment, organisational culture, technological readiness and resource capacity, critically moderate the relationship between CRM and competitiveness. Universities with stronger institutional readiness exhibited higher CRM effectiveness, confirming that CRM success is not solely technological but also cultural and structural. Although staff competence and buy-ins had a positive influence, it was not a statistically significant predictor unless supported by leadership, culture and technological infrastructure. The study therefore emphasises that CRM success demands a multi-dimensional, system-wide approach, integrating technology, human resources and institutional strategy. Thus, CRM should be understood not just as a digital tool but as a strategic innovation essential for long-term growth, differentiation and student-centred transformation in Kenya's private university sector.

**Recommendation:** The study also recommends that private universities strengthen organisational capacity and strategic leadership to fully realise CRM's potential. This should involve allocation of adequate resources, cultivating institutional readiness, and developing leadership competencies in digital transformation and data management. Leadership commitment was identified as a critical moderating variable in this study. Leadership commitment must be demonstrated through clearly structured and defined regular CRM audits, strategic investment and accountability mechanisms.

Universities need to enhance change management strategies to address cultural resistance and to foster an institutional CRM-enabling environment. As recommended by the SERVQUAL model, staff engagement, ongoing training and communication are essential to achieving high service quality and institutional competitiveness.

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