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The Impact of Service Quality and Customer Relationship Management on Customer Loyalty Through Customer Satisfaction Among UMKT Students

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ABSTRACT

With the help of Muhammadiyah University of East Kalimantan (UMKT) students enrolled in the Management Study Program, this study attempts to examine the impact of customer satisfaction and customer relationship management on customer loyalty. A descriptive causal research type is employed using a quantitative technique. 102 students that were chosen through purposive sampling served as responders. Using SmartPLS, the Partial Least Squares-Structural Equation Modeling (PLS-SEM) method was used to analyze the primary data that was gathered through a questionnaire. Customer satisfaction has a positive and large impact on customer loyalty, according to the data, and customer satisfaction has a positive and significant impact on customer relationship management. Nevertheless, neither customer satisfaction nor customer loyalty are significantly impacted by service quality. Most significantly, it has been demonstrated that customer satisfaction completely mediates the relationship between customer loyalty and customer relationship management. Because student loyalty is primarily driven by satisfaction, UMKT's efforts to manage connections with students effectively will boost that satisfaction. According to the study's findings, UMKT's student happiness and loyalty can be increased primarily by adjustments in CRM strategy; nevertheless, further research is required to fully examine enhancements in the Service Quality component.

1. Introduction

Loyalty is a reflection of a company's success (Rane et al., 2023), when a consumer is loyal then they will show behavior to recommend and be willing to pay more (Nuranti et al., 2024). Numerous businesses are vying with one another to develop methods for raising customer pleasure, which eventually affects consumer loyalty. (Sutriani et al., 2024). Service companies are the most significant sector that shows its strategy to make consumers feel satisfied (Amerta & Madhavi, 2023). This competition can be seen from the education service industry which is competing to get students, especially private universities that must improve service quality and be able to provide innovation so that it can trigger consumer interest in studying at the university (Hidayanti et al., 2022). Service companies must also be able to manage their relationship with customers (CRM) [6], especially in private companies which, if they do not have a good relationship with customers, are prepared to lose profits (Seturi, 2024). Customer relationship management shows how far companies pay attention to their customers and how close they are to their customers (Al-radaideh & Zaqaibeh, 2020).

The dynamics of higher education in the modern era require every institution to not

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only focus on academic quality, but also on relationship management with its main stakeholders, namely students (Kumar P. M. & Aithal, 2021). In the increasingly competitive higher education sector, universities are required not only to attract new students but also to retain them through superior service and strong relationships. Universitas Muhammadiyah Kalimantan Timur (UMKT) as one of the leading higher education institutions in the region in East Kalimantan, has a strong commitment to produce competent and competitive graduates in various scientific fields. This commitment is supported by the existence of various units and facilities designed to support campus progress and provide an optimal learning experience for students.

Fig 1. Top 10 Best University in Kaltim 2025 Sinta Kemendiktisaintek Version.
Source: sinta.kemdikbud.go.id, February 2025.

Established in 2017, UMKT managed to dominate by occupying the second position as the campus with the most research, as a relatively new campus UMKT has a relatively large number of students, namely above 10,000 students stusdying at UMKT (www.umkt.ac.id) making UMKT the campus with the second largest number of students in Samarinda after UNMUL. Seeing that UMKT now has many enthusiasts, so in providing the best service and managing its consumers UMKT has a vision, namely as a campus based on information technology and paper less (IT Based Paper Less). Students are the main consumers for private campuses such as UMKT, so private universities must be able to provide differences and offers from state universities, both in terms of service, convenience and others (Hamid & Yip, 2019).

It is commonly known that customer loyalty in a variety of service sectors, including education, is significantly influenced by service quality and customer relationship management (CRM) (Long et al., 2013). Loyal students are more likely to continue their studies, recommend the university to peers, and contribute positively to the institution's reputation (Bakrie et al., 2019). In the context of higher education, students are increasingly regarded as "customers" who expect high-quality services, timely communication, and personalized support (Paricio Royo, 2017). Students who are satisfied with the services provided will increase their loyalty (Qomariah et al., 2020) and with the help of CRM to know the needs and desires of students so that universities are able to create service strategies that lead to student satisfaction (Ogunnaike et al., 2014).

In today's competitive higher education landscape, universities must ensure high service quality and build strong relationships to retain students and foster loyalty (Amerta & Madhavi, 2023; Hidayanti et al., 2022; Juanamasta et al., 2019; Seturi, 2024; Sutriani et al., 2024), (Al-radaideh & Zaqaibeh, 2020). While service quality and customer relationship management (CRM) are recognized as key drivers of satisfaction and loyalty in many sectors, their combined impact in higher education particularly in regional, faith-based universities in developing countries remains underexplored. Most prior studies focus on either service quality or CRM in isolation, often in secular, urban institutions, leaving a gap in understanding how these factors interact to influence loyalty through satisfaction in unique socio-cultural contexts. This gap limits the ability of universities like

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Muhammadiyah Kalimantan Timur an Islamic private university in Indonesia to implement evidence-based strategies for improving student retention. This study addresses this gap by investigating how service quality and CRM together influence student loyalty, mediated by customer satisfaction, offering both theoretical contributions and practical insights for higher education management.

This research considers the importance of examining the role of CRM because of its ability to improve Service Quality is CRM allows UMKT to collect, manage, and analyze student data comprehensively, this information includes academic history, preferences, complaints, and interactions. With this data, UMKT can deeply understand the needs and expectations of students, so as to provide more personalized, relevant, and high-quality services, such as efficient registration processes, responsive academic services, or personalized career support. However, most prior research has focused on universities in developed countries or large metropolitan areas, with less attention paid to regional or faith-based universities in developing countries such as Indonesia

2. Literature Review

This section develops the conceptual and theoretical basis of the study by synthesizing established theories of service marketing and relationship marketing with recent empirical evidence on service quality, customer relationship management (CRM), satisfaction, and loyalty in the higher education context. Priority is given to studies published within the last five years in Scopus- and ISI-indexed outlets, which are then used to justify the hypothesized relationships depicted in the conceptual research framework (Figure 2).

The study is grounded in three complementary theoretical perspectives. First, the Expectation-Disconfirmation Theory (EDT) explains satisfaction as the outcome of a cognitive comparison between pre-consumption expectations and perceived post-consumption performance (Oliver, 1999); when perceived performance meets or exceeds expectations, positive disconfirmation occurs and satisfaction is generated, which in turn shapes repurchase or, in an educational setting, continuation and recommendation intentions. Second, the

SERVQUAL/service-quality paradigm (Zeithaml, Berry, & Parasuraman, 1996) frames service quality as a multidimensional evaluation of the gap between expected and delivered service, and asserts that this evaluation carries behavioral consequences such as loyalty, word-of-mouth, and willingness to pay a premium. In the higher education literature this paradigm has been operationalized through education-specific instruments such as HEdPERF and HESQUAL, which have consistently been validated in recent Scopus-indexed studies (Seitova, Temirbekova, Kazykhankyzy, Khalmatova, & Çelik, 2024; Surya Bahadur, Gurung, Poudel, Yadav, Bhattacharjee, & Dhungana, 2024). Third, the

Relationship Marketing or CRM strategic framework (Payne & Frow, 2005) positions CRM not merely as a technological tool but as a cross-functional strategy for creating, developing, and sustaining value through long-term relationships with customers—in this study, students. Taken together, these three theories provide the logical chain through which service quality and CRM are expected to influence satisfaction, which subsequently drives loyalty.

2.1 Conceptual and Theoretical Foundations

Customer loyalty refers to a deeply held commitment to continue patronizing a preferred product, service, or institution, expressed through repeat behavior as well as favorable attitudes such as willingness to recommend (Oliver, 1999). In higher education, student loyalty is manifested through continued enrollment, positive word-of-mouth to prospective students, and ongoing engagement as alumni (Nelloh, Hartoyo, Sumarwan, & Wirakartakusumah, 2025).

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Recent Scopus-indexed evidence reinforces that loyalty is a multi-causal construct: Albornoz-Toyohama, Mendigure-Hachircana, Haro-Casildo, and Abanto-Ramírez (2025) demonstrated using PLS-SEM that institutional reputation and perceived social responsibility significantly predict student loyalty, which subsequently drives student retention. Similarly, Nelloh et al. (2025) found that service quality and relationship quality jointly shape the loyalty trajectory of business-school alumni over time. These findings confirm that loyalty in the education sector is best understood as a downstream outcome shaped jointly by relational and evaluative antecedents rather than by a single driverCustomer (Student).

Satisfaction is defined as the affective state resulting from an appraisal of the discrepancy between expected and perceived performance (Oliver, 1999). Satisfied students are more inclined to persist in their studies, recommend their institution, and display stronger loyalty (Legi, Tulung, & Pandowo, 2021). Contemporary studies continue to identify satisfaction as the pivotal mediating variable in student behavioral models. Seitova et al. (2024), employing covariance-based SEM on a Kazakhstani university sample, confirmed that perceived service quality is a significant antecedent of student satisfaction. In a cross-national study spanning India and Nepal, Surya Bahadur et al. (2024) similarly reported that program features and administrative service quality assessed through the HEdPERF instrument positively and significantly predict student satisfaction, although not all service-quality dimensions were equally influential. These recent findings justify treating satisfaction as the central mediating construct in the present study's model.

Service quality is a customer's evaluation of how well a delivered service matches or exceeds expectations (Zeithaml, Berry, & Parasuraman, 1996). Within higher education, students increasingly evaluate universities as service providers, judging dimensions such as academic delivery, administrative responsiveness, and physical facilities (Surya Bahadur et al., 2024). Akan, Demir, and Çelik (2021), publishing in Studies in Higher Education, found that perceived instructional quality influences student satisfaction and loyalty indirectly through academic engagement, suggesting that the effect of service quality on distal outcomes such as loyalty is often mediated rather than direct. This is corroborated by Seitova et al. (2024) and Surya Bahadur et al. (2024), both of which found robust effects of service quality on satisfaction but more limited or inconsistent direct effects on loyalty-related outcomes, particularly in newly established or regionally-focused institutions.

CRM is an organization-wide strategy for managing an institution's interactions with current and prospective customers with the aim of enhancing relationships, retention, and loyalty (Payne & Frow, 2005). In higher education, CRM enables institutions to collect and utilize student data—academic history, preferences, and complaints—to deliver personalized and responsive services (Ogunnaike, Borishade, & Jeje, 2014). A recent bibliometric analysis of Scopus-indexed publications from 2014–2024 by Shalihati, Sumarwan, Hartoyo, and Yuliati (2025) mapped the evolution of CRM research in higher education and showed a thematic shift from early studies on service quality and reputation toward advanced themes such as AI-driven CRM and multi-channel communication, while also identifying that empirical evidence on CRM's long-term impact on student loyalty in developing-country and faith-based institutional contexts remains limited. Complementing this, Kayal and Billah (2026), in a longitudinal study of a private non-profit university, found that a formalized CRM framework—comprising multi-tiered feedback systems and key performance indicators—significantly shaped student satisfaction and subsequently influenced re-enrolment (loyalty) decisions, underscoring CRM's role as a primary driver of satisfaction rather than a direct driver of loyalty.

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2.2 Review of Empirical Studies

The strong desire to continuously buy or subscribe to a favored good or service in the future is known as customer loyalty. Even while marketing campaigns and contextual factors might influence behavior (Oliver, 1999). Loyalty is not just repeat purchase behavior, but also includes positive attitudes and commitment. High student loyalty indicates the institution's success in meeting expectations and creating long-term value for them (Griffin & Lopez, 2005). Various studies show that Customer Satisfaction is the main predictor of Customer Loyalty (Oliver, 1999), (Zeithaml et al., 1996).

The degree of emotion a person experiences after contrasting their expectations with the perceived performance (or results) is known as customer satisfaction. (Legi et al., 2021). Satisfaction is a positive feeling that arises when needs and wants are met. Satisfied students are more likely to continue their studies, recommend the institution to others, and show higher loyalty (Oliver, 1999).

A customer's evaluation of how well the services they receive match or surpass their expectations is known as service quality. (Zeithaml. et al., 2018). High service quality is expected to create a positive experience for students, which in turn will affect their satisfaction and loyalty (Zeithaml et al., 1996).

An all-encompassing business strategy called customer relationship management (CRM) is intended to oversee a company's communications with both present and potential clients (Payne & Frow, 2005). CRM may enhance communication, personalize services, and help the institution better understand its students, all of which lead to higher levels of satisfaction and loyalty (Tochukwu Ignatius Ijomah et al., 2024). CRM's primary objective is to enhance company relationships in order to promote client retention, loyalty, and sales growth.

2.3 Identification of the Research Gap

Most prior research on student customer paradigms has focused on state universities in developed countries or large metropolitan areas (Paricio Royo, 2017). Less academic focus has been granted to newer private, faith-based higher education setups in regional territories of developing countries like East Kalimantan, Indonesia, which face explicit infrastructure limitations.

2.4 Development of the Conceptual Framework

The conceptual framework of this study integrates four core variables: Service Quality (SQ) and Customer Relationship Management (CRM) as exogenous variables, Customer Satisfaction (Sat) as the mediating variable, and Customer Loyalty (Loyalty) as the ultimate endogenous variable. Operationally, Service Quality in this higher education context reflects the students' cognitive evaluation of the university's academic delivery, administrative responsiveness, and physical infrastructure. Meanwhile, CRM is operationally defined as the strategic, technology-driven management of continuous interactions and communication channels between the university administration and the student body. Customer Satisfaction captures the overall emotional and evaluative state of students regarding their campus experience, whereas Customer Loyalty is manifested through the students' behavioral intentions to continue their studies, recommend the institution, and maintain a long-term positive relationship with the university.

Rather than merely isolating these concepts, the structural framework models how institutional inputs (SQ and CRM) translate into behavioral outcomes (Loyalty). Empirical literature consistently indicates that in service-driven environments, technical quality and relational management do not automatically generate structural loyalty; instead, they function as foundational antecedents that feed into the psychological state of satisfaction. Previous studies demonstrate that a high level of Service Quality directly elevates student satisfaction by meeting or exceeding everyday functional

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expectations (Suryawirawan et al., 2022). Concurrently, effective CRM infrastructures foster a supportive environment that enhances customer satisfaction through personalized problem-solving and proactive communication (Lukman et al., 2021).

Crucially, the relationship between these independent inputs and final student loyalty is dynamically mediated by satisfaction. While direct paths from SQ and CRM to loyalty are often hypothesized, empirical evidence increasingly highlights that customer satisfaction acts as the primary mechanism—or gatekeeper—that secures long-term institutional commitment (Dhiman Deepika, 2020; Pio Leonardo Cavaliere et al., 2021). When students feel satisfied with the perceived services and relationship channels, this positive evaluative state directly drives their structural loyalty. Consequently, this framework positions Customer Satisfaction as a full mediator to explain the pathway through which SQ and CRM exert their true long-term impact on student retention.

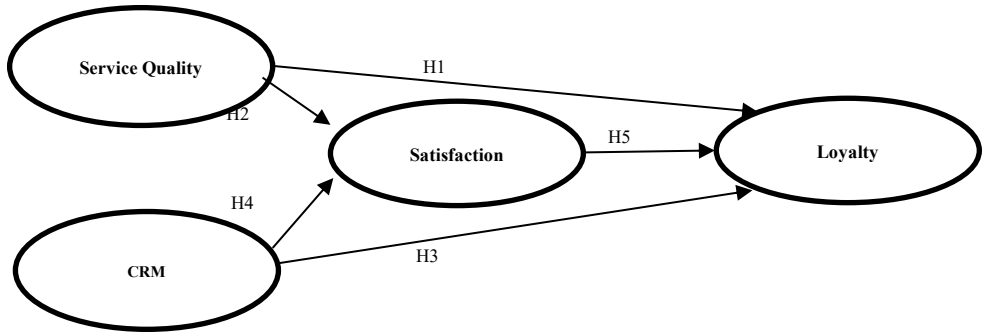

Fig. 2. Conceptual Framework of the study.

2.5 Hypotheses or Research Propositions

Service quality is widely recognized as a critical factor in fostering customer loyalty, particularly in the higher education sector where students' perceptions of service can influence their long-term commitment to the institution. Service quality plays a crucial role in fostering student loyalty by building satisfaction, and long-term commitment. Recent studies confirm this positive relationship. (Rachbini et al., 2020) found that higher service quality significantly increased student loyalty. The higher the service quality, the higher their loyalty level (Isniati et al., 2024).

H1. Service quality positively influence loyalty.

Service quality has consistently been identified as a key determinant of customer satisfaction in the higher education sector. High service quality creates positive student perceptions, which enhance their overall satisfaction with the university experience. Several recent studies support this relationship. Service quality positively influenced satisfaction (Lukman et al., 2021). A study by (Suryawirawan et al., 2022) also confirmed that service quality had a significant positive effect on satisfaction. These findings consistently indicate that improving service quality remains a strategic priority for universities to enhance student satisfaction and loyalty

H2. Service quality positively influence satisfaction.

Effective customer relationship management (CRM) strengthens student loyalty by fostering engagement, trust, and long-term relationships. This study examines the crucial influence of Customer Relationship Management (CRM) in building and sustaining customer loyalty, consistent with prior studies that consistently demonstrate how investment in comprehensive CRM strategies positively correlates with increased customer retention and long-term loyalty (Sodikin & Ariyanti, 2020; Zahida et al., 2023).

H3. Customer relationship management positively influence loyalty.

While the importance of Customer Relationship Management (CRM) in business is widely acknowledged, this study focuses on

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how CRM implementation, through service personalization and responsiveness, specifically influences and elevates customer satisfaction, confirming and extending frameworks proposed by earlier researchers regarding CRM's role in building positive, long-term relationships (Dhiman Deepika, 2020; Pio Leonardo Cavaliere et al., 2021).

H4. Customer relationship management positively influence satisfaction.

Customer satisfaction is widely recognized as a key antecedent of loyalty. In the context of higher education, satisfied students tend to develop a stronger emotional connection to their university, which increases their likelihood of continuing enrollment, recommending the institution to others, and maintaining a positive relationship as alumni. This study asserts that customer satisfaction is a critical precursor to customer loyalty, aligning with (Utami et al., 2023) foundational work that delineates the progression from satisfaction to various stages of loyalty, and further supported by (Ayu Imbayani et al., 2021) empirical findings that consistently demonstrate a strong positive correlation between satisfaction levels and customer retention.

H5. Satisfaction positively influence loyalty

3. *Research Methods*

3.1 Measurement of Variables and Research Instruments

This research operationalizes four core structural constructs into measurable elements using multi-item continuous scales. To ensure robust construct validity and alignment with modern academic standards, all measurement indicators were adapted from reputable international journals predominantly published within the last five years. Every item was measured using a 5-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

3.2 Data Analysis Techniques

Data processing utilizes Structural Equation Modeling (SEM) via Partial Least Squares (PLS) with the SmartPLS 4 software application. PLS-SEM was chosen for its suitability in causal-predictive analysis and complex mediation modeling without requiring strict multivariate normality.The analysis follows a two-stage procedure:Measurement Model (Outer Model): Evaluates construct validity and reliability using indicator loadings, Cronbach's alpha, Composite Reliability (CR), and Average Variance Extracted (AVE), alongside discriminant validity verification.Structural Model (Inner Model): Evaluates the hypothesized causal pathways by calculating the Coefficient of Determination R^2, effect sizes F^2, and employing a Bootstrapping procedure (5,000 resamples) to generate T-statistics and P-values for definitive hypothesis testing.

3.3 Validity, Reliability, and Trustworthiness

Model measurement quality was evaluated through internal consistency and convergent validity testing, establishing criteria where outer loading indicators must exceed 0.6, Average Variance Extracted (AVE) must exceed 0.5, and Cronbach's Alpha alongside Composite Reliability values must stay above 0.7 (Hair et al., 2020).

3.4 Ethical Considerations

Data collection was performed with strict adherence to academic ethics. Informed consent was obtained from all student participants, ensuring absolute data privacy, anonymity, and confirming that the data gathered was strictly utilized for scientific research purposes.

3.5 Research Procedure

The research was executed in structured chronological phases: (1) Problem identification and context formulation, (2) Hypothesis and instrument development, (3) Online survey dissemination, (4) Primary data processing and model evaluation in SmartPLS 4, and (5) Result interpretation and reporting.

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3.6 Methodological Limitations

The methodological scope of this research is limited to a cross-sectional sample of active students in a single study program at one regional private campus, meaning the findings may not be widely generalizable to large state public universities.

4. Results and Discussion

4.1 Research Results

In order to ensure the accuracy and relevance of the measurement, the validity test is carried out to see whether the research instrument accurately measures the constructs it is meant to assess. Simultaneously, the reliability test seeks to assess the instrument's internal consistency and stability to make sure it produces consistent results under comparable circumstances during repeated uses.

Table 1.1. Construct Reliability and Validity

Variable	Indicator	Loading Factor	Cronbach's Alpa	Average Variance Extrated (AVE)	Desc.
Service Quality	SQ1	0.805	0.894	0.702	Valid & Reliable
	SQ2	0.822			
	SQ3	0.881			
	SQ4	0.861			
	SQ5	0.818			
Customer Relationship Management	CRM1	0.797	0.825	0.590	Valid & Reliable
	CRM2	0.816			
	CRM3	0.786			
	CRM4	0.76			
	CRM5	0.774			
Satisfaction	S1	0.915	0.909	0.735	Valid & Reliable
	S2	0.844			
	S3	0.887			
	S4	0.780			
	S5	0.855			
Loyalty	L1	0.795	0.918	0.753	Valid & Reliable
	L2	0.884			
	L3	0.881			
	L4	0.886			
	L5	0.890			

Source: Data analysis with SmartPLS 4.

It can be seen from Table 1.1 that all research instruments meet the reliability and validity criteria, where all models have an AVE value> 0.5 and Cronbach's alpa> 0.7, thus confirming that all research instruments can be further analyzed.

Model fit is utilized in the Partial Least Squares Structural Equation Modeling (PLS-SEM) method to evaluate how well the computed structural model fits the data. The average difference between the expected and observed covariance matrix is known as the SRMR. The smaller, the better. d_ULS is a measure of model mismatch to unweighted data. The smaller the better. d_G is a measure of the geodesic distance between the model & data. The smaller the better, Chi-square is a test statistic that shows the total mismatch between model & data. Smaller values are better, NFI is the ratio of model improvement over the null model. The closer to 1 the better.

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Table 1.2. Model Fit

	Saturated model	Estimated model
SRMR	0.075	0.075
d_ULS	1.181	1.181
d_G	0.971	0.971
Chi-square	471.209	471.209
NFI	0.750	0.750

Source: Data analysis with SmartPLS 4

The model fit was evaluated using a number of indices suggested in the PLS-SEM literature, as Table 1.2 shows. The model demonstrated a decent fit to the data with a standardized root mean square residual (SRMR) value of 0.075, below the suggested cutoff of 0.08 (Henseler et al., 2016). An appropriate degree of model-data congruence is also suggested by the discrepancy measures, which fall within reasonable bounds when compared to their respective bootstrap-based critical values. These measures are unweighted least squares discrepancy (d_ULS = 1.181) and geodesic discrepancy (d_G = 0.971).

The chi-square value obtained was 471.209, which, although relatively large, is common in models with larger sample sizes and complex structures, and is therefore not considered a primary indicator of misfit in the context of PLS-SEM (Hair et al., 2020). Finally, the normed fit index (NFI) was reported at 0.750, which is slightly below the commonly suggested cutoff of 0.90 for ideal fit, but still within the acceptable range for exploratory research (Henseler et al., 2016).

As advised by PLS-SEM, the coefficient of determination (R2) and the effect size (f2) were used in this investigation to evaluate the explanatory power of the model. The percentage of the endogenous (dependent) variable's variation that can be accounted for by the exogenous (independent) constructs in the model is shown by the R2 value. R2 values of 0.25, 0.50, and 0.75 are regarded as weak, moderate, and considerable, respectively, by Hair et al. (2020). A higher R2 value suggests that the model can better explain the dependent variable

Table 1.3. The Result of R^2

	R-square	R-square adjusted
Loyalty	0.562	0.549
Satisfaction	0.771	0.766

Source: Data analysis with SmartPLS 4.

Based on Table 1.3. That the results of the coefficient of determination (R^2) indicate that the proposed model explains a moderate to substantial proportion of variance in the endogenous variables. Specifically, the R^2 value for student loyalty was 0.562, suggesting that 56.2% of the variance in loyalty can be explained by service quality, customer relationship management (CRM), and customer satisfaction. Meanwhile, the R^2 for customer satisfaction was 0.771, indicating that 77.1% of the variance in satisfaction is explained by service quality and CRM. Based on the guidelines by Hair et al. (2020), these values reflect a moderate explanatory power for loyalty and a substantial explanatory power for satisfaction.

Table 1.4. The Reuslt of F^2

	Loyalty	Satisfaction
CRM	0.013	0.512
Loyalty		
Satisfaction	0.201	
Service Quality	0.000	0.106

Source: Data analysis with SmartPLS 4.

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Based on Table 1.4 that the effect size (f^2) was also assessed to determine the relative contribution of each exogenous construct to the endogenous variables. The results show that CRM has a negligible effect on loyalty (f^2 = 0.013) but a large effect on satisfaction (f^2 = 0.512). Service quality demonstrated no meaningful direct effect on loyalty (f^2 = 0.000) but had a small effect on satisfaction (f^2 = 0.106). In addition, customer satisfaction showed a medium effect on loyalty (f^2 = 0.201). These findings indicate that CRM is the strongest predictor of satisfaction, while satisfaction plays a meaningful mediating role in influencing loyalty

The path coefficient indicates the direction and strength of the effect. Path analysis was used to investigate the causal relationships among the variables in the structural model. The hypotheses were tested using bootstrapping; the results showed significant relationships with t-statistics greater than 1.96 and p-values less than 0.05.

Table 1.5. Result of Hypothesis Result

Hypothesis	Original sample	Sample mean	(STDEV)	T statistics	P values	Result
H1 SQ on Loyalty	-0.028	-0.041	0.167	0.169	0.865	Rejected
H2 SQ on Sat	0.285	0.296	0.122	2.341	0.019	Accepted
H3 CRM on Loyalty	0.172	0.165	0.169	1.016	0.310	Rejected
H4 CRM on Sat	0.626	0.619	0.108	5.782	0.000	Accepted
H5 Sat on Loyalty	0.620	0.641	0.185	3.353	0.001	Accepted

Source: Data analysis with SmartPLS 4.

The outcomes of the hypothesis testing with SmartPLS 4 are shown in Table 1.5. With a T-statistic of 0.169 and a p-value of 0.865, the results suggest that Service Quality (SQ) does not significantly affect Loyalty (H1), and the hypothesis is rejected. Nonetheless, with a T-statistic of 2.341 and a p-value of 0.019, Service Quality (SQ) significantly improves Satisfaction (H2), hence confirming the hypothesis. Similarly, a T-statistic of 1.016 and a p-value of 0.310 show that Customer Relationship Management (CRM) has no direct, significant impact on Loyalty (H3), leading to the rejection of this hypothesis. However, with a T-statistic of 5.782 and a p-value of 0.000, CRM shows a large and significant effect on Satisfaction (H4), supporting the hypothesis..

Additionally, a T-statistic of 3.353 and a p-value of 0.001 confirm the hypothesis that Satisfaction (Sat) has a significant and positive impact on Loyalty (H5). These findings imply that rather than having a direct impact on loyalty, CRM and service quality both largely affect it indirectly through satisfaction.

Table 1.6. Result of Indirect Effect

Variable	Original sample	Sample mean	(STDEV)	T statistics	P values
CRM-Sat-Loyalty	0.388	0.393	0.122	3.167	0.002
SQ-Sat-Loyalty	0.177	0.195	0.113	1.559	0.119

Source: Data analysis with SmartPLS 4.

The relationship between CRM and loyalty is successfully mediated by satisfaction, as shown in Table 6 (P-Values <0.005), whereas the relationship between service quality and loyalty is not successfully mediated by satisfaction, as indicated in this study (P-Values >).

4.2 Research Discussion

The findings in this study emphasize that satisfaction is an important mediation to

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increase UMKT student loyalty, the results in this study indicate that CRM has a significant effect on satisfaction, which means that students are satisfied with the actions or actions of UMKT to provide services taken from student information and data so that students feel that UMKT has succeeded in managing their students, then Service Quality is able to increase UMKT student satisfaction, meaning that the services provided have been able to be felt well by UMKT students so that they feel satisfied, UMKT student satisfaction has succeeded in increasing student loyalty. These results also show that UMKT has succeeded in making students feel satisfied, but several things need to be improved in order to encourage student loyalty.

The findings of this study consistently align with previous research that underscores the importance of Customer Satisfaction as a key driver of Customer Loyalty. Studies by (Dhiman Deepika, 2020; Pio Leonardo Cavaliere et al., 2021) consistently show that customer satisfaction serves as a fundamental foundation for building long-term relationships and significantly influences repeat purchases and recommendations. By demonstrating that customer satisfaction strongly mediates long-term connections and has a considerable impact on recommendations and repeat business, our study supports this viewpoint. By demonstrating that customer satisfaction plays a substantial mediating role in the relationship between customer loyalty and customer relationship management (CRM) as well as between service quality and customer loyalty, this study supports this viewpoint. CRM and customer satisfaction also have a strong beneficial relationship. (Lukman et al., 2021) and Service Quality and Customer Satisfaction (Suryawirawan et al., 2022) is also consistent with existing literature.

However, this study also reveals dynamics that deviate from some previous findings. While some studies (Sodikin & Ariyanti, 2020) indicate a direct effect of Service Quality or CRM on Loyalty, this study shows that Service Quality does not have a significant direct effect on Customer Loyalty. This offers a new perspective in the context of this study: loyalty tends to depend more on the overall customer satisfaction experience resulting from CRM and Service Quality, rather than the direct effects of CRM or Service Quality themselves. The implication is that investments in CRM and Service Quality must be explicitly directed towards creating high customer satisfaction, as this satisfaction is the primary driver of loyalty (Utami et al., 2023).

Service quality does not significantly affect loyalty (H1), indicating that students are only satisfied with the service but are not yet motivated to be loyal in the sense of recommending it to others. This is because UMKT is still in the process of developing its campus as a private Muslim university in East Kalimantan. Higher perceived service quality does not correspond to increased loyalty; in fact, the effect is slightly inverse, though not statistically meaningful. This finding implies that student loyalty may be more strongly influenced by other factors, such as satisfaction, trust, institutional reputation, or emotional engagement, rather than direct perceptions of service quality.

At UMKT, the correlation between CRM and student loyalty (H3) produced an original sample estimate of 0.172 and a p-value of 0.310. The link is not statistically significant because the p-value exceeds the traditional significance level of 0.05. This suggests that there is not enough data to draw the conclusion that CRM directly affects student loyalty within the parameters of this study.

However, CRM and service quality do not have a significant effect on UMKT student loyalty, meaning that UMKT students are only satisfied but not loyal to the services that have been provided, this is because many students still complain about the quality of UMKT services, so it is an input for UMKT to improve student services so that they want to recommend UMKT to others in other words they are loyal. This is because UMKT is a

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relatively new campus that is still undergoing improvements in terms of service quality and building relationships with students, such as a lack of parking space, limited classroom space, slow Wi-Fi, and unfriendly academic services. Moving forward, UMKT should address these issues to ensure that students are not only satisfied but also willing to recommend UMKT to their social circles.

Although Service Quality and CRM do not significantly impact Loyalty, UMKT can focus on how to make students satisfied with services and strengthen relationships with them by improving aspects such as promptly addressing student complaints, being responsive in academic services, constructing buildings to provide adequate classroom space, and so forth, so that satisfied students will become loyal and serve as free promotional tools for private Muslim universities like UMKT.

The improvements in CRM practices may be associated with higher student loyalty; however, the magnitude of this effect is modest and not strong enough to be statistically validated. This suggests that while CRM initiatives at UMKT may contribute in some way to loyalty, they might not be the primary or most influential factor driving students' long-term commitment

5. Conclusion

5.1 Summary of Key Findings

This study demonstrates that both Customer Relationship Management (CRM) and Service Quality have a positive and considerable impact on student Customer Satisfaction. In turn, Customer Satisfaction significantly and favorably impacts student Loyalty. Crucially, the direct paths from both CRM and Service Quality to Customer Loyalty are statistically insignificant. Student Customer Satisfaction fully mediates the relationship between CRM and student loyalty, whereas it does not successfully mediate the link between service quality and loyalty within this structural context.

5.2 Theoretical Contributions

The study adds value to administrative service frameworks by showing that in emerging regional education clusters, standard direct marketing assumptions do not always apply. It highlights the absolute requirement of customer satisfaction as a critical precursor that translates structural relationship mechanisms into long-term commitment.

5.3 Practical and Policy Implications

Practically, platform managers and university administrative units must prioritize user experience optimization over simple relational data collection. Platforms should offer secure interactive features, service personalization, and immediate responsiveness in resolving student issues to build institutional trust.

5.4 Limitations of the Study

The scope of this study is contextually constrained to a single private Islamic university environment in Indonesia. Consequently, the findings cannot be generalized to explain student behavioral dynamics across massive secular state public institutions or different cultural regions.

5.5 Directions for Future Research

It is recommended that platforms or service units strengthen the user experience dimension through secure interactive features, service personalization, and high responsiveness in CRM interactions. Education or information regarding effective service usage and problem resolution should be enhanced to build consumer trust. Furthermore, efforts to improve Service Quality should be carried out continuously, with particular attention to aspects crucial for students (for example, technological infrastructure like Wi-Fi if that is a major issue) to ensure that the services provided truly create satisfaction. Integrating community values and launching student-centered campaigns can also serve as emotionally

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resonant approaches for students. Future research is also encouraged to consider external variables and qualitative approaches to explore the deeper psychological aspects of student loyalty

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