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Analysis Of Customer Relationship Management (CRM) Implementation On Student Satisfaction And Loyalty At Tutoring X

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ABSTRACT

This study investigates the impact of Customer Relationship Management (CRM) implementation on student satisfaction and loyalty at Bimbingan Belajar X, a leading tutoring center in Indonesia. Despite its established reputation, the institution faces challenges such as low student retention rates and a lack of long-term commitment. Analysis indicates that only 40% of students maintain loyalty, significantly below the desired 75% target. The study identifies a trend where many students enroll primarily for short-term, exam-oriented preparation rather than continuous tutoring. To address these issues, the research emphasizes the importance of strengthening customer relationships through effective CRM strategies. By leveraging modern technology, including e-learning platforms and personalized learning systems like Item Response Theory (IRT), Bimbingan Belajar X can enhance communication, provide tailored learning experiences, and foster stronger connections with students. The findings suggest that improved CRM practices are crucial for increasing student satisfaction and loyalty, which are essential for maintaining a competitive edge in the increasingly competitive education sector. Without innovation and adaptation to evolving market demands, Bimbingan Belajar X risks losing its prominent position in the educational landscape.

INTRODUCTION

Education is one of the pillars in the life of a nation. Just as a building needs a strong foundation, so does a country need its citizens to be educated. Education not only provides knowledge, but also forms the character, skills and attitudes needed to face the challenges of the times. In Indonesia, education continues to experience rapid and significant development and progress. The government consistently strives to improve the quality of education through various strategic policies. Starting from providing adequate facilities and infrastructure, developing a relevant curriculum, to improving teacher competence. All efforts are made so that

Indonesia becomes a country that has high competitiveness due to its superior human resources. However, the education system in Indonesia is still faced with various complex challenges. Among them are the gap in the quality of education between urban and rural areas, the lack of adequate facilities and infrastructure in some areas, and the low competence of teachers in some areas.

In this modern era, education is the main requirement to be able to improve the quality of one's life, as well as being the main key to achieving success. The development of education in Indonesia today also brings another impact for students. Many students experience challenges and difficulties learning independently. The learning process provided at school and the time that has been provided, is often felt to be insufficient for students to understand the subject matter in depth. Not a few students in Indonesia need help outside of school to be able to follow a good learning process and achieve optimal learning outcomes. Another challenge for students is the high demand for grades at school and the rising standards for admission to favourite universities. One of the main reasons why grades in school are becoming more demanding is that the competition to get into favourite universities is getting tougher. More and more students want to get into prestigious universities, so colleges are raising their admission standards. The increasing number of high school graduates each year, coupled with the limited number of seats in favourite universities, means that students must compete to achieve high grades. This requires students who want to enter college to study harder. According to data from the Ministry of Education and Culture in 2024, the number of applicants choosing study programmes at academic universities is 659,217 participants, who are competing for 132,450 capacity seats. Based on the results of the selection carried out by each Rector of the Academic PTN, the number of participants who passed the SNBP selection path in 2024 was 126,421 participants.

In this case, tutoring comes as one of the solutions to the problems faced by students. Tutoring comes as an additional education that is very effective in improving students' abilities outside of school. Tutoring also answers the needs of students through more in-depth explanations through questions and exercises. Students get preparation for the exams they face through reliable teachers, extra study hours and practice questions that have been compiled to resemble exam questions. Every student has a different learning style, so tutoring allows for a customised learning approach to suit the student's needs and preferences.

One of the tutoring centres that provides a solution to the challenges faced by students is X tutoring. Tutoring X is one of the leading tutoring institutions in Indonesia with a long history and good reputation. Established in 1984, it has proven that it has a quality that is recognised by many students, parents, and educational institutions in Indonesia. The number of students in Tutoring X per year reaches 150,000 students. Tutoring X has helped many students in achieving their optimal learning achievements and helped many students get into their dream colleges. As of 2024, X tutoring has succeeded in delivering more than 50,000 students to state and private universities.

In the midst of its development, there are various challenges faced by X Tutoring. Some of the challenges are the abolition of the National Exam and the negative stigma from parents and students who often doubt the effectiveness of tutoring. The elimination of the National Exam affects students' motivation to attend tutoring. With the absence of the National Exam, students do not feel the challenge of achieving and working towards a certain standard. This, coupled with the notion that students can learn independently at home or that tutoring is only for less intelligent students, is often the reason tutoring is less desirable.

Many students and parents do not understand that tutoring is there to support and equip students for formal education at school, which is often faced with challenges and difficulties. To overcome this negative stigma, X tutoring always communicates the tangible benefits that students get from attending X tutoring. These benefits can be in the form of improved academic performance, soft skills development, or preparation for important exams.

If Tutoring X is not able to innovate and adapt quickly, it will be difficult to survive amidst the stigma and increasingly fierce competition. The emergence of new competitors with more interesting learning methods, more relevant materials, or more complete additional services will also threaten the sustainability of X's tutoring. Therefore, to remain relevant and in demand by students and parents, X tutoring continues to improve the quality of its services and adapt to the times. In other words, if students and parents are not satisfied with the services provided, they will easily move to other institutions. In conditions of fierce competition, customer satisfaction becomes the determining factor of success. Tutoring X must be able to provide quality services and in accordance with the needs of students will be easier to retain existing students and attract new students. And this is the real challenge faced by tutoring X, where students are often not loyal in following the learning programme in tutoring X. The assessment of loyal students is analysed from the number of students who register from the previous year to the following year.

The following is a table of the number of students of Tutoring X taken from the data of the branch of Tutoring X in the Greater Bandung sector.

Figure 1 Table Of The Number Of Students Of X Tutoring Centre Bandung Raya In 2022-2024

DATA JUMLAH SISWA CABANG BANDUNG TAHUN 2022 -2024									
		TAHUN 2023				TAHUN 2024			
JENJANG	TOTAL SISWA TAHUN 2022	SISWA DAFTAR DARI TAHUN 2022- LOYAL	%	SISWA BARU DAFTAR DI TAHUN 2023	TOTAL SISWA TAHUN 2023	SISWA DAFTAR DARI TAHUN 2023- LOYAL	%	SISWA BARU DAFTAR DI TAHUN 2024	TOTAL SISWA TAHUN 2024
SD	501	146	29%	310	456	146	32%	277	423
SMP	985	455	46%	493	948	529	56%	515	1,045
SMA	4,402	1,789	41%	2,920	4,709	2,027	43%	3,168	5,194
Total	**5,888**	**2,390**	41%	**3,723**	**6,113**	**2,702**	44%	**3,960**	**6,662**

In the table and graph above, it can be seen that the level of student loyalty as a customer of tutoring X in the last 3 years is still relatively low, which is below 45%. Student loyalty is an important factor that affects the effectiveness of the student learning process and the company's sales level. This loyalty means that students have a commitment and to achieve the learning goals that affect the sustainability of the tutoring to have sustainable sales. With a stable number of students, tutors can more easily plan and manage their operations. Another thing is that tutors with a high level of student loyalty will have a good reputation in the eyes of the community. This good reputation will attract more new students.

Competition in Indonesia's tutoring industry is getting tougher. The emergence of various online learning platforms, private tutors, and new tutors with more attractive offers makes it easier for students to switch. This causes the level of student loyalty to one tutoring institution to decrease. The low level of student loyalty is a serious challenge to the sustainability of the tutoring business in Indonesia. As a result, many institutions experience a decline in the number of students and revenue.

Student loyalty is the key to the long-term success of X Tutoring. Currently, the loyalty level of students in Tutoring X has only reached 40%, a figure that is still far from the target desired by the company's management which is 75%. The target of 75% loyalty is not just a number, but a commitment to build strong and sustainable relationships with students. By increasing loyalty, Tutoring X will not only secure a stable source of income, but also enhance its reputation and strengthen its position in the market. To achieve this ambition, Tutoring X needs to conduct a

detailed analysis of their current tutoring weaknesses and strengths. With a loyalty rate below 45%, there is still great potential to increase revenue and business growth through efforts to retain existing students and attract new ones.

In addition to customer loyalty, a challenge for X tutoring is the tendency for students to join X tutoring only in grade XII or at the end of their education. It can be concluded that this happens because students join the tutoring only to prepare for college entrance only for one academic year. Attached below is a data table analysing the number of students in grade XII of Tutoring X who only join tutoring when entering grade XII in the period 2022 to 2024.

Figure 2 Table Of The Number Of Students In class XII Of The Greater Bandung Branch Of X Tutoring In 2024

DATA JUMLAH SISWA KELAS XII SMA CABANG BANDUNG					
TAHUN	TOTAL SISWA KELAS XII SMA	SISWA BARU DAFTAR DI KELAS XII	%	SISWA LOYAL XII SMA	%2
2022	2,553	1,585	62%	968	38%
2023	2,637	1,507	57%	1,130	43%
2024	2,987	1,620	54%	1,367	46%

Facing these challenges, Tutoring X needs to make efforts to survive. By making various improvements and innovations, Tutoring X can increase the level of student loyalty and sales. In this case, guidance X needs to manage good relationships with students and parents as their customers so that the level of loyalty and sales can continue to increase. Therefore, it is important for tutoring institution X to analyse the implementation of Customer Relationship Management so that it can continue to survive as one of the leading tutoring institutions in Indonesia. Customer Relationship Management (CRM). Customer Relationship Management (CRM) is one of the important strategies in maintaining customer loyalty and minimising the possibility of customers switching to competitors or unsubscribing. The main goal of Customer Relationship Management (CRM) is to improve relationships with customers and increase sales. Customer Relationship Management (CRM) not only creates relationships between sellers and buyers, but also seeks to establish deeper partner relationships with customers. By understanding the needs and wants of tutoring customers, X tutoring can ensure that customers remain loyal and do not switch to competitors and remain loyal to them. This is a very important approach in maintaining competitiveness and existence in the existing tutoring competition.

In implementing CRM, Tutoring X is also assisted by the advancement of modern technology. Whereas in the past the teaching and learning process was centred on teachers and textbooks, in today's modern era with technology, education has become more interactive, flexible and personalised. With the advancement of technology, tutoring equips its services with online learning e-Learning and learning applications. The application of technology in tutoring aims to strengthen relationship management with customers, in this case students and parents. By utilising modern technology, educational institutions can increase operational efficiency, improve communication, and provide a better learning experience for students. Challenges remain, but with the right strategy, technology can be a very effective tool in improving the quality of education.

As one of the largest tutoring centres in Indonesia, the success of X tutoring cannot be separated from the use of technology, including CRM, to effectively manage relationships with students and prospective students. Tutoring X has implemented the IRT (Item Response Theory) system for more effective and efficient learning. IRT adjusts the difficulty level of questions to the ability of each student. The data generated from the IRT system can be utilised by CRM to

provide more personalised learning recommendations. In addition to IRT, X Tutoring has centralised data so that student data is centralised in one system. This makes it easier to track student progress and provide better services.

LITERATURE REVIEW

Customer Relationship Management (CRM)

Customer Relationship Management (CRM) is a new approach to managing corporate and customer relationships at the business level so as to maximise communication and marketing through managing a variety of different contacts with customers. This approach makes it possible to retain customers and provide continuous added value to customers and obtain sustainable profits (Edward C Malthouse, 2013). Further explained by Kotler and Keller (2009), Customer Relationship Management (CRM) is the process of managing detailed information about each customer and carefully managing all customer 'touch points' to maximise customer loyalty. Meanwhile, according to Gordon (2002) 'CRM is a series of strategies and processes that create new and mutual value for individual customers, build preference for their organisations and improve business results over a lifetime of association with their customers'. CRM is an approach to recognise the customer as the core of the business. The success of the company depends on the effectiveness of managing relationships with customers (Turban, 2002).

Customer Satisfaction

The word 'satisfaction' or satisfaction comes from the Latin 'satis' (meaning good enough, adequate) and 'facio' (to do or make), so that in simple terms it can be interpreted as an effort to fulfil something. According to Kotler (2007) satisfaction is a person's feeling of pleasure or disappointment that arises after comparing the performance (results) of a product that is thought against the expected performance (or results). If the performance is below expectations, the customer is dissatisfied. If the performance meets expectations, the customer is satisfied. If the performance exceeds expectations, the customer is very satisfied or happy. Satisfaction will encourage consumers to buy and re-consume the product. Conversely, feelings of dissatisfaction will cause consumers to be disappointed and stop repurchasing or consuming the product. (Nirvana, 2004).

Customers or customers are individuals or buyers who use goods or services continuously for personal purposes from the goods or services offered by the company (Kotler & Keller, 2009). In other words, customers are people or buyers who do not depend on a product, but the product depends on the person. Because these customers are buyers or users of a product, they must be given satisfaction.

Customer satisfaction can be defined as 'an effort to fulfil something' or 'making something adequate'. 'Satisfaction is the consumer's fulfillment response. It is judgment that a product or service has met the customer's needs and expectations. Failure to meet needs and expectations is assumed to result in dissatisfaction with the product or service' (Zeithaml, V., Bitner, M., Gremler, D., 2009). Customer satisfaction is a feeling of pleasure or disappointment that is the result of a comparison of perceived product performance and expectations (Kotler & Armstrong, 2010).

Customer satisfaction has several factors that can influence it, namely as the theory mentioned below. Irawan (2002) says, there are main drivers of factors that affect customer satisfaction that must be considered by companies, namely product quality, price, service quality, convenience. Lupiyoadi (2001) says, as for the factors that affect customer satisfaction that companies must pay attention to, namely product quality, service quality, emotional, price, and cost. Companies must be able to strive to improve these four indicators to attract and satisfy customers.

Customer Loyalty

According to Griffin (2003), consumer loyalty is more associated with behaviour than with attitudes. A loyal consumer is someone who buys goods or services that meet the following criteria: make regular repeat purchases, buy other products offered by the same manufacturer, recommend the product or service to others. According to Tjiptono (2001), customer loyalty is a customer commitment to a brand, store, supplier, based on a positive attitude which is reflected in consistent repeat purchases. According to Griffin (2003), customer loyalty is an activity in making regular purchases, buying outside the product / service line, recommending other products, showing immunity from the attractiveness of similar products from competitors. Kotler and Keller (2009) also define customer loyalty as 'the long term success of the particular brand is not based on the number of consumers who purchase it only once, but on the number who become repeat purchases'.

METHODS

Data were analysed using PLS - SEM (Partial Least Squares - Structural Equation Modelling) technique. SEM is a statistical analysis technique used to estimate the degree of relationship between variables in the context of structural models (models with more than one relationship path). Analysis with SEM also considers the level of representation or quality (validity and reliability) of the measurement model. PLS is an SEM approach with characteristics that do not involve covariance relationships (mutual influence or two-way correlation), and also free distribution, meaning that this method does not require data normality, is not affected by the presence of outliers, does not require randomisation of sampling, and does not require large sample sizes. With all these concessions, PLS turns out to provide a more appropriate approach in applying regression to estimate the degree of relationship between variables (Henseler, Ringle & Sinkovics, 2009; Hair, Ringle & Sarstedt, 2011). The selection of the PLS - SEM method in the study was based on the following two considerations:

1. The analysed model is multimodel (there is more than one relationship path). It is known that there is a mediator variable (intervening variable) that forms the minimal structure of a multimodel. With only one dependent variable, path analysis or even just linear regression (with hierarchy or multilevel) is sufficient to analyse the research model. The reasons for still choosing to use PLS - SEM are mentioned in the next point.
2. The CRM implementation variable is treated as a second-order factor and its dimensions are expressed as first-order factors (Kim, 2009). That means that both service speed, employee friendliness, and facility cleanliness are latent variables (unobserved variables), namely variables that do not have intrinsic values that describe themselves but are contributed or described by their indicators. To be able to analyse variables like this, the SEM method is needed, and the PLS - SEM approach was chosen because of the advantages mentioned earlier.

Analysis with PLS - SEM consists of two parts, namely outer model analysis and inner model analysis. The outer model is the measurement component of the structural model, showing how well the measuring items relate to the construct (variable) they measure. Analysis of the outer model is carried out to test convergent validity, discriminant validity, and construct reliability. The criteria for convergent validity are the outer loading of each indicator> 0.7 and the AVE (Average Variance Extracted) value for each construct> 0.5. Discriminant validity can be assessed based on the Fornell-Larcker criterion, namely the square root of the AVE of each construct is greater than all correlation coefficients between constructs. For constructs with formative indicators (for example in the case of second-order factors), validity can be assessed from the indicator path coefficient and the collinearity test (VIF). Construct reliability criteria are Cronbach's alpha > 0.6 or composite reliability > 0.7 (Hair, Ringle & Sarstedt, 2011).

The inner model is the main component of the structural model consisting of variables and the relationship paths between these variables. The main purpose of the PLS - SEM method is to estimate the value of the path coefficient of the relationship between variables. The most important analysis of the inner model related to research is bootstrapping, namely doubling the sample to conduct statistical tests on the path coefficients. This statistical test is the basis for hypothesis testing. Model fit (goodness of fit) can be assessed by several parameters such as RMSEA, CFI, and GoF (Hair, Ringle & Sarstedt, 2011; Henseler & Sarstedt, 2013). The significance level of the statistical test used in this study is 0.05. Calculations for PLS-SEM analysis were carried out using the SmartPLS programme.

RESULTS

Convergent Validity

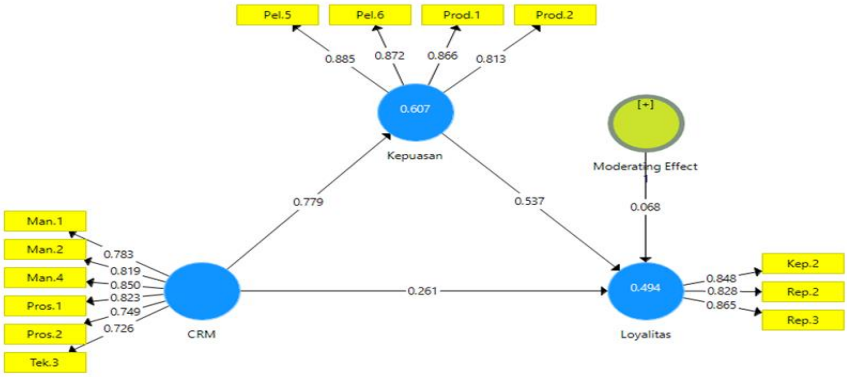
In assessing each construct, the construct assessment is seen from convergent validity. Convergent Validity is measured using the outer loading and AVE (Average Variance Extracted) parameters. Individual reflexive measures are said to be correlated if the value is more than 0.7 with the construct to be measured. However, for research in the early stages of development, a measurement scale with a loading factor value of 0.5 to 0.6 is considered sufficient (Ghozali and Latan, 2015). The following are the results of the outer model which shows the Outer Loading value using the SmartPLS 3.0 analysis tool.

Convergent Validity aims to determine the validity of each relationship between indicators and their constructs or latent variables. Convergent Validity of the measurement model with reflexive indicators is assessed based on the correlation between the item score or Component Score and the latent variable score or Construct Score estimated by the SmartPLS programme.

Table 1 Outer Loading Test Results - Phase 1

Variable	Indicator	Outter Loading	Criteria	Description
Customer Relationship Management	**Man.1**	0.783	> 0.7	**Valid**
	Man.2	0.819	> 0.7	**Valid**
	Man.4	0.850	> 0.7	**Valid**
	Pros.1	0.823	> 0.7	**Valid**
	Pros.2	0.749	> 0.7	**Valid**
	Tek.3	0.726	> 0.7	**Valid**
Customer Satisfaction	**Pel.5**	0.885	> 0.7	**Valid**
	Pel.6	0.872	> 0.7	**Valid**
	Prod.1	0.866	> 0.7	**Valid**
	Prod.2	0.813	> 0.7	**Valid**
Loyalty	**Kep.2**	0.848	> 0.7	**Valid**
	Rep.1	0.828	> 0.7	**Valid**
	Rep.2	0.865	> 0.7	**Valid**

Figure 3 Result Algoritma PLS



Source: Data processed from questionnaires (2024)

Based on Table 1 and Figure 3 it can be seen that all indicators have a Loading Factor value of more than 0.70. Therefore, the data in this study can proceed to the next test.

Discriminant Validity

Discriminant validity is used to test the validity of a model. The Discriminant Validity value is seen through the Cross Loading value which shows the magnitude of the correlation between the construct and its indicators and indicators of other constructs.

The standard value used for Cross Loading must be greater than 0.7 or by comparing the Square Root Average Variance Extracted (AVE) value of each construct with the correlation between the construct and other constructs in the model. If the AVE root value of each construct is greater than the correlation value between the construct and other constructs in the model, it can be said to have good Discriminant Validity value (Fornel and Larcker, 1981 in Ghozali and Latan, 2013). The results of Cross Loading in Discriminant Validity analysis can be seen in table 4.2 Discriminant Validity testing, reflective indicators can be seen in the Cross Loading between indicators and their constructs. According to Ghozali (2015) an indicator is declared valid or declared to meet Discriminant Validity if the Cross Loading value of the indicator on the variable is the largest compared to other variables, as shown in Table 2 below:

Tabel 2 Cross Loading Test Results - Cross Loading

	CRM	Satisfaction	Loyalty	Moderating Effect 1
Man.1	**0.783**	0.581	0.454	-0.601
Man.2	**0.819**	0.613	0.490	-0.499
Man.4	**0.850**	0.674	0.537	-0.508
Pros.1	**0.823**	0.625	0.504	-0.433
Pros.2	**0.749**	0.552	0.440	-0.313
Tek.3	**0.726**	0.645	0.502	-0.477
Pel.5	0.659	**0.885**	0.596	-0.464
Pel.6	0.727	**0.872**	0.559	-0.571
Prod.1	0.658	**0.866**	0.616	-0.415
Prod.2	0.632	**0.813**	0.587	-0.360
Kep.2	0.597	0.630	**0.848**	-0.329
Rep.2	0.457	0.549	**0.828**	-0.275
Rep.3	0.502	0.556	**0.865**	-0.243

Source: Data processed from questionnaires (2024)

From Table 2 It can be seen that the correlation of the Customer Relationship Management construct on each indicator, namely, Man.1, Man.2, Man.4, Pros.1, Pros.2 and Tek.3 in sequence is 0.783; 0.819; 0.850; 0.823; 0, 749 and 0.726 higher than the correlation of other construct indicators. Furthermore, the correlation of Loyalty on each indicator, namely, Pel.5, Pel.6, Prod.1, and Prod.2 in sequence is 0.885; 0.872; 0.866; 0.813 and 0.813 higher than the correlation of other construct indicators, respectively. The correlation of Customer Satisfaction on each indicator Kep.2, Rep.2 and Rep.3 respectively is 0.848; 0.828 and 0.865 higher than the correlation of other construct indicators. Thus it can be concluded that all constructs or latent variables already have good discriminant validity from a cross loading perspective, where the indicators in the construct indicator block are higher than the indicators in other blocks.

Discriminant Validity testing can also be done by looking at the AVE root for each construct which must be greater than the correlation with other constructs, which will be seen from Table 4.15 Fornell-Lacker Criterion.

Table 3 Fornell-Lacker Criterion Test Results

	CRM	Satisfaction	Loyalty
CRM	0.793		
Satisfaction	0.779	0.860	
Loyalty	0.617	0.686	0.847

Source: Data processed from questionnaires (2024)

Based on the results of discriminant validity testing (Fornell-Lacker Criterion) , it can be seen that there is still a Fornell - Lacker Criterion value that is under the column or in the left column greater than the column in the cross section between variables. Overall, it can be concluded that according to the results of discriminant validity testing (Fornell-Lacker Criterion) the research data model has entered into good criteria and is feasible to continue.

Table 4 Discriminant Validity Test Results (Heterotrait- Monotraitratio)

	CRM	Satisfaction	Loyalty
CRM			
Satisfaction	0.881		
Loyalty	**0.725**	**0.811**	
Moderating Effect 1	**0.635**	**0.561**	**0.372**

Source: Data processed from questionnaires (2024)

Next is testing discriminant validity using the Heterotrait-Monotrait Ratio (HTMT) matrix. According to Henseler et al (2016) there is a new criterion for testing Discriminant Validity by looking at the results of the Heterotrait-Monotrait Ratio (HTMT) matrix in PLS. Where recommending the measurement value must be smaller than 0.85 although the value above 0.85 to a maximum of 0.90 is still considered sufficient. The results of discriminant validity testing show that the research variables have met the validity requirements, because none exceeds the value of 0.85.

Average Variance Extracted (AVE) Test

Another method for seeing Discriminant Validity is to look at the Square Root value of Average Variance Extracted (AVE) of each construct with the correlation between constructs and other constructs in the model, so it can be said that in this study the AVE value of each construct

is above 0.5, so there is no Convergent Validity problem in the model tested so that the constructs in this research model have good Discriminant Val idity.

Table 5 Discriminant Validity (AVE) Test Results

Variable	Criteria	Average Variance Extracted (AVE)
Customer Relationship Management	> 0,5	0.628
Satisfaction	> 0,5	0.739
Loyalty	> 0,5	0.718

Source: Data processed from questionnaires (2024)

From Table 5 above, it can be seen that the Customer Relationship Management variable has an AVE value (0.628), the Loyalty variable has an AVE value (0.739) and finally the Customer Satisfaction variable with an AVE value (0.718). Thus it can be stated that each variable in this study has a good AVE value.

Cronbach's Alpha testing aims to test the reliability of instruments in a research model or measure internal consistency and the value must be ≥ 0.60. If all latent variable values have a Composite Reliability value or Cronbach alpha ≥ 0.60, it shows that the construct has good reliability or the questionnaire used as a tool in this study is reliable and consistent (Ghozali, 2015).

Table 6 Validity And Reliability Test Results Construct

Variable	Criteria	Cronbach's Alpha
Customer Relationship Management	> 0,6	0.881
Loyalty	> 0,6	0.882
Customer Satisfaction	> 0,6	0.804

Source: Data processed from questionnaires (2024)

Based on Table 6 the results show that all research variables have a Cronbach's Alpha value greater than 0.6. So it can be concluded that the data in this study passed the Validity and Reliability Construct tests.

Structural Model Test Results (Inner Model)

Inner model testing is the development of concept and theory-based models in order to analyze the relationship between exogenous and endogenous variables, which have been described in the conceptual framework. Inner model analysis is carried out with the aim of ensuring that the structural model built is robust and accurate. Testing of the structural model is done by looking at the R-Square value which is the Goodness - Fit model test. The stages of testing the structural model (Inner model) are carried out with the following steps:

Coefficient Of Determination R-Square (R2)

The coefficient of determination R-Square (R2) shows how much the independent variable explains the dependent variable. The R-Square value is zero to one. If the R-Square value is closer to one, the independent variables provide all the information needed to predict the variation in the dependent variable. Conversely, the smaller the R-Square value, the more limited the ability of the independent variables to explain the variation in the dependent variable. The R-Square value has the disadvantage that the R-Square value will increase every time there is an

addition of one independent variable even though the independent variable has no significant effect on the dependent variable. Based on the data processing that has been done, the R-Square value is obtained as follows:

Table 7 R-Square Test Results

		R Square	R Square Adjusted
Structural Model 1	Customer Relationship Management → Customer Satisfaction	0.607	0.606
Structural Model 2	Customer Relationship Management; Customer Satisfaction → Loyalty	0.494	0.491

Source: Data processed from questionnaires (2024)

Based on the results of the R-Square test in table 4.7 Structural Model 1 indicates that the model of the influence of the Customer Relationship Management variable on Customer Satisfaction can be said to be strong because it has a value in the range of 0.600 - 0.800. The Customer Relationship Management research model on Customer Satisfaction has an R-square value of 0.607 or 60.7%, meaning that Customer Satisfaction can be explained by Customer Relationship Management by 60.7% while 39.3% can be influenced by other variables not examined.

Furthermore, the results of the R-Square test in table 4.7 Structural Model 2 indicate that the model of the influence of the Customer Relationship Management variable and Customer Satisfaction on Loyalty can be said to be moderate because it has a value in the range of 0.400 - 0.600. The Customer Relationship Management and Customer Satisfaction research model on Loyalty has an R-square value of 0.494 or 49.4%, meaning that Loyalty can be explained by Customer Relationship Management and Customer Satisfaction by 49.4% while 50.6% can be influenced by other variables not examined.

Coefficient Of Determination F-Square (F2)

F-Square (Effect Size) is a measure used to assess the relative impact of an influencing variable (exogenous) on the influenced variable (endogenous). The F-Square value of the model is used to determine the effect size of the endogenous latent variable on the exogenous latent variable. If the F-Square value is above or equal to 0.35, it can be interpreted that the latent variable predictor has a strong influence, if it is in the range of 0.15 - 0.35 it has a moderate influence and if it is in the range of 0.02 - 0.15 it has a weak influence (Ghozali, 2014).

Table 8 Test Results F-Square

	Structural Model 1		Structural Model 2	
	Customer Satisfaction	Criteria	Loyalty	Criteria
Customer Relationship Management	1.542	Strong	0.047	Weak
Customer Satisfaction			0.221	Medium
Loyalty				

Source: Data processed from questionnaires (2024)

Coefficient Of Determination Q-Square (Q2)

Prediction relevance (Q-square) or known as Stone-Geisser's. This test is conducted to determine the prediction capability with the blindfolding procedure. If the value obtained is 0.02 (small), 0.15 (medium) and 0.35 (large). A Q-square value greater than 0 (zero) shows that the model has predictive relevance, while a Q-square value less than 0 (zero) shows that the model lacks predictive relevance. However, if the calculation results show a Q-square value of more than 0 (zero), then the model deserves to be said to have relevant predictive value.

Table 9 Q-Square Test Results

		SSO	SSE	Q^2 (=1-SSE/SSO)	Criteria
Structural Model 1	**Customer Satisfaction**	1912.000	1064.558	**0.443**	**Besar**
Structural Model 2	**Loyalty**	1434.000	940.984	0.344	Sedang

Source: Data processed from questionnaires (2024)

Based on Table 4.9, the results of the Construct Crossvalidated Redundancy test show the test results of theQ2 value = 0.443 on the Customer Satisfaction variable and theQ2 Value = 0.344 on the Loyalty variable. The calculation results show the predicted relevance value> 0 in the three structural models in the study, so that the model can be said to be feasible and has a relevant predictive value.

Hypothesis Test Results

The next test is to see the significance of the influence between variables by looking at the parameter coefficient value and the significance value of the t-statistic, namely through the bootstrapping method (Ghozali & Latan, 2015). Significance testing is based on the bootstrapping standard error as the basis for calculating the t and p values on the path coefficient.

Figure 3 Bootstraping Test Results

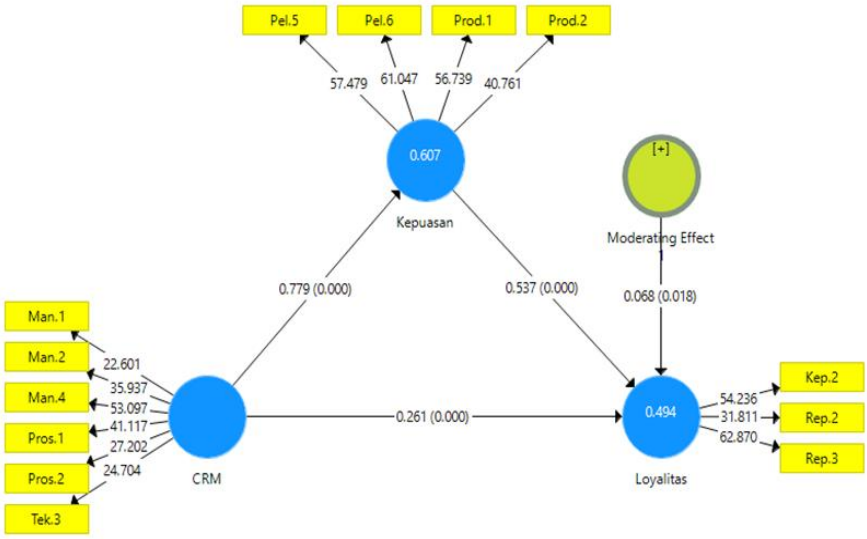


Table 10 Hypothesis Testing Results

No	Hypothesis	Original Sample	Standard Deviation	*t-statistics*	*t-table*	Sig,	Decision
1	Customer Relationship Management → Customer Satisfaction	0,779	0,028	27,656	1,965	0,000	H1 accepted
2	Customer Relationship Management → Loyalty	0,261	0,059	4,411	1,965	0,000	H1 accepted
3	Customer Satisfaction → Loyalty	0,537	0,051	10,497	1,965	0,000	H1 accepted
4	Moderating Effect → Loyalty	0,068	0,029	2,370	1,965	0,018	H1 accepted

Source: Data processed from questionnaires (2024)

DISCUSSION

The Effect Of Customer Relationship Management On Customer Satisfaction

Based on Table 10 and Figure 2 above, it shows that the effect of Customer Relationship Management on Customer Satisfaction is significant with a t-statistic value of 27.656 (>1.965; t-table2,0.05,478). The original sample estimate value is positive, namely 0.779, which indicates that the direction of the relationship from Customer Relationship Management to Customer Satisfaction is positive. So the H1 hypothesis in this study can be concluded that Customer Relationship Management has a positive and significant effect on Customer Satisfaction is accepted.

The Effect Of Customer Relationship Management On Loyalty

Based on Table 10 and Figure 2 above, it shows that the effect of Customer Relationship Management on Loyalty is significant with a t-statistic value of 4.411 (>1.965; t-table2,0.05,478). The original sample estimate value is positive, namely 0.261, which indicates that the direction of the relationship from Customer Relationship Management to Loyalty is positive. So the H1 hypothesis in this study can be concluded that Customer Relationship Management has a positive and significant effect on Loyalty is accepted.

The Effect Of Customer Satisfaction On Loyalty

Based on Table 10 and Figure 2 above, it shows that the effect of Customer Satisfaction on Loyalty is significant with a t-statistic value of 10.497 (>1.965; t-table2,0.05,478). The original

sample estimate value is positive, namely 0.537, which indicates that the direction of the relationship from Customer Satisfaction to Loyalty is positive. So the H1 hypothesis in this study can be concluded that Customer Satisfaction has a positive and significant effect on Loyalty is accepted.

The Effect Of Moderating Effect On Loyalty

Based on Table 10 and Figure 2 above, it shows that the effect of the Moderating Effect on Loyalty is significant with a t-statistic value of 2.370 (>1.965; t-table2,0.05,478). The original sample estimate value is positive, namely 0.068, which indicates that the direction of the relationship from the Moderating Effect to Loyalty is positive. So the H1 hypothesis in this study can be concluded that the Moderating Effect has a positive and significant effect on Loyalty is accepted.

CONCLUSION

The results of research on X tutoring customers in the Greater Bandung branch using the Partial Least Squares (PLS) method show several important conclusions regarding the relationship between Customer Relationship Management (CRM), Customer Satisfaction, and Loyalty as follows:

1. Model validity and reliability
   All constructs in the research model show good validity, with Convergent Validity and Discriminant Validity values meeting the established criteria. The Cronbach's Alpha values for all variables are also greater than 0.6, indicating that the instruments used have high reliability.
2. Effect of Customer Relationship Management (CRM)
   There is a positive and significant influence between CRM on Customer Satisfaction with a t-statistic value of 27.656. This shows that an increase in CRM will contribute to an increase in customer satisfaction.
3. The effect of customer satisfaction on loyalty
   The analysis results also show that Customer Satisfaction has a positive and significant effect on Loyalty with a t-statistic of 10.497. This indicates that satisfied customers are more likely to remain loyal to the company.
4. The effect of CRM on loyalty
   There is a significant positive influence between CRM on Loyalty with a t-statistic value of 4.411. This indicates that efforts in customer relationship management not only increase satisfaction but also contribute to customer loyalty.
5. Moderating Effect
   Testing the moderating effect shows a significant effect on loyalty, which indicates that other factors can influence the relationship between customer satisfaction and loyalty.

SUGGESTION

In order to improve operational effectiveness and efficiency, as well as strengthen relationships with customers, this study provides several suggestions that can be implemented by X tutoring. These suggestions are based on the in-depth analysis that has been conducted on the effect of Customer Relationship Management (CRM) on Customer Satisfaction and Loyalty of Tutoring X in the Greater Bandung Branch. By considering the results obtained, Tutoring X is expected to take relevant strategic steps to improve performance and achieve its long-term goals.

1. CRM improvement for the company
   The company is advised to continue developing more effective CRM strategies to improve interactions with customers, so as to increase their satisfaction.

2. Focus on customer satisfaction
   Given the importance of customer satisfaction in building loyalty, companies should conduct regular surveys to measure satisfaction levels and identify areas of improvement.
3. Provide training for employees
   Training employees on the importance of customer service and how to improve the customer experience can have a positive impact on satisfaction and loyalty.
4. Further Analysis
   Tutoring X is advised to conduct further analysis of other factors that may affect the relationship between CRM, satisfaction, and loyalty so that the company can formulate a more comprehensive strategy.
5. Implementation of Customer Feedback
   Implementing an effective feedback system to listen to the voice of customers can help companies customize services and products according to customer needs and expectations.

By implementing the suggestions outlined above, Tutoring Institution X is expected to take effective strategic steps to improve and enhance customer relationships. This includes developing programs that are more responsive to customer needs and wants, as well as improving the quality of services provided. In addition, the implementation of these suggestions also aims to create stronger loyalty in the future. Customer loyalty is very important as it can contribute to the sustainability and growth of the institution. Loyal customers are not only likely to use the services on a recurring basis, but can also be positive brand ambassadors, recommending the institution to others. Focusing on improving customer relationships and loyalty will help X Tutoring to achieve its long-term goals and compete more effectively in the education industry.

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