

## **CUSTOMER LIFETIME VALUE METRICS AS CUSTOMER RELATIONSHIP MANAGEMENT INDICATORS**

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**Abstract:** The use of CLV can assist companies in making management decisions in determining the most profitable strategy for the company. The formulation of the problem in this study is related to the analysis of the strategy applied by PTTWJ in CRM using one of the CRM metrics, namely CLV. The purpose of this study was to analyze the strategies that must be applied in managing customers and identify the factors causing the decline in visitors. The method used in this research was descriptive qualitative with a case study approach. Data collection techniques used in this study were in-depth interviews, documentation, observation and literature study. The types of data used in this study were primary and secondary data. Primary data obtained from in-depth interviews and observations. Secondary data obtained from documentation and literature study. Credibility test using triangulation and member check. Data analysis was inductive by drawing conclusions from data or events through interviews, documentation, observations, and calculations. Based on the results of data analysis, it is known that there is a decrease in the value of CLV in all categories. It is because the company only implements CRM in a simple and not optimal way.

**Keywords:** *CLV, CRM, Triangulation, Thematic Analysis, Customer*

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### **1. Introduction [Times New Roman 12 bold]**

One of the strategies used to create customer satisfaction in order to achieve competitive advantage is to establish relationships between customers or usually called customer relationship management (CRM). The implementation of CRM may improve the relationship between the Company and the customers (Ascarza *et al.*, 2017). CRM is the process of acquiring, retaining, and enhancing profitable customer relationships. CRM is the Company effort to gain customer trust by meeting the needs of each customer more personally (Hassan *et al.*, 2015). The company must be able to implement a customer-focused strategy in order to provide maximum needs to customers. Maintaining a good relationship with customers is very important for the Company.

One of the metrics of CRM to see profitable customers for the company is customer lifetime value (CLV) (Kumar and Rajan, 2020). The principle underlying of CLV is that the customer is an intangible asset of the Company that must be valued and controlled (Chen *et al.*, 2018). The use of CLV can assist the Company in making management decision in determining the most profitable strategy for the Company (Febrianty and Febriantoko, 2018).

CLV is a value and behavior carried out by every company to maintain a better relationship as a partner with customers in a relatively long period of time. By knowing the CLV value of each buyer or customer, the Company can apply various strategies to these customers by classifying existing customers into several categories (Dahana, Miwa and Morisada, 2019). Customer satisfaction and loyalty is a goal that must be achieved by a company. However, to be able to get the attention of customers is not as easy as expected because it takes knowledge to build good relationships with customers (Febriantoko and Mayasari, 2018). A company that is engaged in services is one example of a company that is very closely related to customers because the products offered are in the form of services that are in direct contact with customers.

One company that implements customer relationship management is PT. Taman Wisata Jogja (PTTWJ). This company has implemented various efforts in retaining customers, one of which is providing fees or incentives at PTTWJ in the form of attractive discounts or vouchers for each category of customers who bring customers to come. However, the available data indicate that there is a problem in customer management as shown in Table 1.

Table 1. PTTWJ Visitor List

Year	CATEGORY								Total
	Regular	Company	Travel Agency	School	Partnership	Agency	Hotel/ Resort	Ticket Agency	
2015	314.348	36.352	43.719	41.732	57.290	30.555	31.452	49.323	604.771
2016	318.342	30.918	40.181	40.005	51.376	28.848	24.907	51.198	585.775
2017	319.404	26.970	37.620	29.654	48.487	26.696	35.676	55.668	589.941

Source: Processed Data, 2021

Based on the data in table 1 of the PTTWJ customer list in 2015-2017, there was a total decrease of customers. The results of initial observations in the sales division and data from the finance division showed that at PTTWJ there were problems with customer management. It resulted in a significant decrease in the number of customers and the number of rides is getting more complete. Therefore, researchers are interested in studying more deeply about CRM and then measuring CRM with the CLV metric on PTTWJ.

Based on the background above, the formulation of the problem in this study is related to the analysis of the strategy applied by PTTWJ in CRM using one of the CRM metrics, namely CLV. The research questions are : (1) how is the implementation of CRM with CLV metrics at PTTWJ?, (2) What are the factors that are obstacles in retaining customers at PTTWJ?. The purpose of this study was to analyze the strategies that must be applied in managing customers and identify the factors causing the decrease in the number of visitors at PTTWJ. This research is expected to contribute to the management of PTTWJ in calculating CLV and become a reference material for further researchers who are interested in conducting research on customer relationship management through financial metrics, namely the measurement of CLV and the impact of the results of these calculations on decisions made by management for the development of strategies that new research, especially in the field of tourism, as well as to strengthen previous research. The novelty of this research lies in the CLV calculation process with various formulas combined with coding techniques for qualitative data generated from the interview process. All types of businesses need intensive assistance to increase profitability and resilience (Febriantoko, Mayasari and Sepindjung, 2020).

### **Customer Relationship Management (CRM)**

A company marketing strategy must always evolve due to changes in the business environment that continues to change from by year and now these changes are felt faster than in previous years because of the impact of globalization, especially the development of social media networks. CRM is the right tool to be used by management as an effort to face increasingly fierce competition in this era of globalization. Through CRM, the company management can formulate and determine the company strategy that will be used in the future so that the company can win the competition from competing companies and earn profits (Soltani *et al.*, 2018). CRM is a direct approach to customers by utilizing information technology (Wijaya, 2020). The goal is to build good relationships with customers so that these customers become loyal to buy products or services needed and expected by the customers.

Customer relationship management supports a company to provide services to the customers directly by establishing good relationships with valuable customer through the use of information about customers (Rahimi and Kozak, 2017). In addition, CRM is also a process of building and maintaining profitable customer relationships by providing great value product to customers so that customers become satisfied. Viewed from the Company perspective, the purpose of CRM is to help the marketing division within the Company to be able to identify and determine the best customers for the Company, conduct marketing campaigns and produce quality guidance for the sales team, assist the Company in improving sales, and provide a form of relationship between the Company and its customers. In addition, CRM also equips Company employees with important information and processes that must be known in relation to customers (Nuralam, 2018).

Other things that are advantages of implementation of CRM include customer retention, customer acquisition, and customer profitability. Customer retention is the ability of a company to be able to retain loyal customers and to increase business profits. Customer acquisition can be defined as the ability to acquire the right customers based on understood and learned characteristics that drive growth and increase profit margins. Meanwhile, customer profitability is increasing individual customer profits by offering the right product at the right time.

### **Customer Lifetime Value (CLV)**

One of the metrics used to manage the relationship between the Company and its customers is CLV. CLV is a relationship that exists between producers and customers in a relatively long time. CLV is a quantitative measurement of a Company's net cash flow and generated by customers throughout their relationship with the Company (Chen *et al.*, 2018). The CLV concept is defined as the amount of revenue earned from the Company's customers during the transaction period after deducting the total costs of acquisition, selling, marketing, and serving customers by considering the value of time and money (Pratama, 2016). There are several requirements that must be met by the Company when implementing CLV, namely the Company needs to know the data of each customer, namely profits from time to time that can be used to project profits in the future, the Company needs to implement an integrated system across functions and must also have an adequate database system so as to provide convenience in the data collection process, and recording is only done using a customer-based-costing system (Daud, 2016).

The components that determine the Company in calculating CLV include marketing costs, discount rates, and time periods. Marketing costs refer to the costs incurred by the Company in serving customers, improving good relationships with all customers to become loyal, as well as efforts to win back customers who have been there before, but switch to competing companies. Basically the Company marketing costs consist of development costs and retention costs. The discount rate is one component that must be taken into account. This is because the value of money is not constant over a long period of time. In addition, money received today is more valuable than money received in the future. Thus, it is necessary to discount the gross contribution and marketing costs incurred by the Company to determine the current value of money. The discount rate depends on the general interest rate which is usually proportional to the interest rate paid on the savings account by the bank. In some companies the discount rate will vary depending on the company's cost of capital. The illustration for past and future time periods indicate the life span on which the customer is based. In addition, the time period shows an estimate of the duration at which the Company management makes marketing decisions.

### **Customer Profitability**

Customers are intangible assets for a Company. Therefore, Company management needs to establish good relationships with customers to remain loyal to the Company and do not run away to competing companies. A company can win the competition with competing companies if it is able to make a product or service that is different and innovative, provided that the product or service must be in accordance with what the customer needs. Customer profitability is a measure of how much a customer contributes to the company's profit (Parningotan, 2017). A profitable customer is a customer who promises an adequate inflow of income to cover the total costs and investments made by the Company (Sadli, no date).

Another opinion states that customer profitability is the profit earned by the Company for services provided to individual or group customers over a certain period of time, in particular the difference between the revenue earned and costs related to customer relationships over a certain period of time (Samuel, 2018). The types of profits according to the measurement of the level of profit for a particular profit center there are five types. The five types of profit are contribution margin, division controlled profit, direct profit, net profit before tax, and net profit after tax. Contribution margin is calculated by subtracting variable costs from revenue earned by a division. This concept is useful for planning and making profit decisions for a division in the short term. The division's controlled profit is calculated by reducing revenue with costs that can be controlled by the division manager which includes controlled variable costs and controlled fixed costs. Direct profit can be calculated by subtracting the division's revenue with all costs directly incurred in the division concerned. This profitability is suitable for assessing long-term profitability. Net income before tax is calculated by calculating divisional revenues with division direct costs and head office costs. This profit reflects the division economic performance. Because the division enjoys the facilities of the head office, the division allocates the costs of the head office. Net profit after tax is calculated by deducting net income before tax by division income tax. As an independent economic entity, the division profit needs to take into account its income tax.

## 2. Research Method

The method used in this research was descriptive qualitative with a case study approach. Descriptive qualitative research method is a research method that illustrates the actual state of the data collected (Gubrium and Holstein, 2012). The purpose of this method is to obtain a complete and in-depth description of the entity and to explain an event in that entity. The data collection techniques used in this study were in-depth interviews, documentation, observation and literature study (Sugiyono, 2017). The types of data used in this study were primary and secondary data. Primary data obtained from in-depth interviews and observations (Gelling, 2015). Secondary data obtained from documentation and literature study. The selection of informants in the interviews used purposive sampling with an expert analysis approach. Observations were carried out openly so that the subjects and objects studied know the existence of the researcher (Olsen, 2012).

Credibility test of the data using the triangulation technique and member check (Carter *et al.*, 2014). The triangulation used was source triangulation, technique triangulation and time triangulation. The research stages start from raising the problem in the research, identifying the case under study, analyzing the case and drawing conclusions from the analysis.

Data analysis in this study is inductive by drawing conclusions from data or events through interviews, documentation, observation, and calculations. The analysis process to draw conclusions from research results uses thematic analysis (Braun and Clarke, 2016). This analysis will look the main themes that appear in the data obtained from the field through the coding stage (Fusch and Ness, 2015).

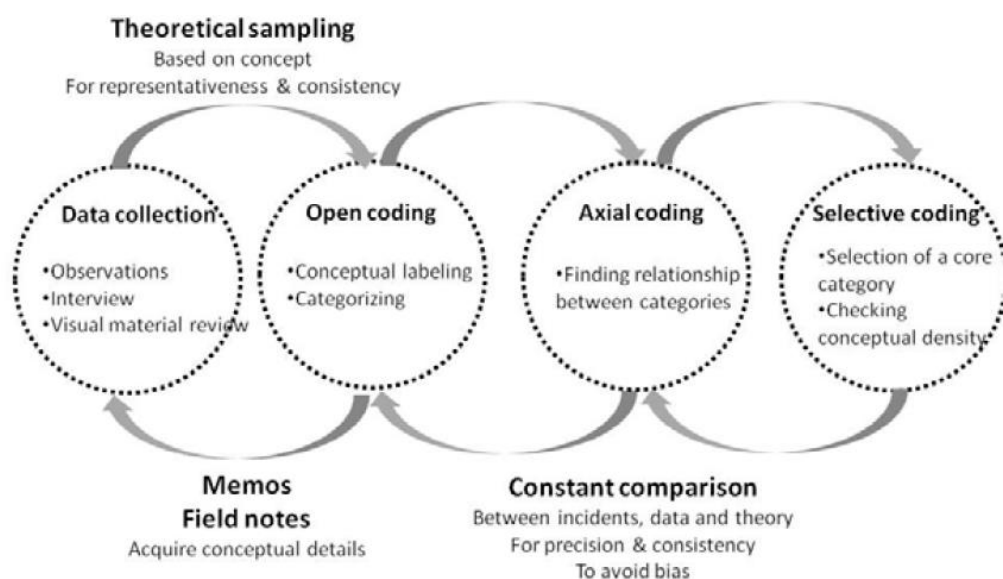


Figure 1. Stage of Coding in Research

Source: (Fusch and Ness, 2015)

The stages of data analysis in this study are, (1) reviewing interviews conducted with the marketing division, (2) documenting relevant data such as customer lists, and (3) performing calculations and analysis of relevant data such as customer profitability with using the CLV method. The CLV formula used in this study are:



$$LV = \sum_{t=1}^{\infty} \frac{m \cdot r^t}{(1+i)^t} = m \left( \frac{r}{1+i-r} \right)$$

Keterangan:

m = contribution of margin for each customer in a certain t-period  
i = discount rate  
r = customer retention rate  
 $r/(1+i-r)$  = *margin multiple*

Margin contribution (m) is derived from the difference between the revenue earned from a customer during a certain period (eg, years) and the variable costs incurred by the Company to serve the customer. The discount rate (i) is obtained from the interest rate based on the BI rate in a year. Interest rates fluctuate throughout the year. Therefore, to obtain the final value of the interest rate for that year, the interest rate is calculated on a harmonic average. The harmonic average is the average calculated by converting all data into fractions with the data value used as the denominator and the numerator that is 1, then all the fractions are added up and then used as a divisor for the amount of data. Mathematically the measurement average (harmonic) is formulated as follows.

$$H = \frac{n}{\frac{1}{x_1} + \dots + \frac{1}{x_n}}$$

The customer retention rate (r) is obtained from the difference between the number of customers at the end of the period and the number of new customers during the period divided by the number of customers at the beginning of the period multiplied by 100. Mathematically, the customer retention rate is formulated as follows.

$$r = \frac{(CE-CN)}{CS} \times 100$$

To calculate the CLV, secondary data is needed in the form of annual financial report data published by the Company. The advantage of this method is that the simple and rational because it calculates CLV using the Gupta and Lehmann (2003) model. The most rational thing is Gupta and Lehmann (2003) use the contribution margin as the main component in calculating CLV. By using CLV Company can find out directly the income obtained from each customer served. In other words, the Company is able to measure the net profit generated by the customer so that the Company will be able to plan and make short-term decisions accurately.

### 3. Results and Discussion

#### 3.1. Results

##### *Customer Segmentation*

Running a business in the tourism sector, PTTWJ classifies customers based on the product or service category they have. There are eight segments owned such as regular; Company; Travel Agency; Schools; Partnership; Agency; hotels or resorts; and Ticket Agency. Of the

eight types of customer segmentation, there are different prices, for example, customers who are included in the regular segmentation have a higher price than customers from the Ticket Agency segment. The contribution margin of each customer segmentation is presented in table 2.

Table 2. Contribution Margin

CATEGORY	Contribution Margin		
	2015	2016	2017
Regular	60,000	60,000	60,000
Company	40,000	40,000	40,000
Travel Agency	35,000	35,000	35,000
School	35,000	35,000	30,000
Partnership	40,000	40,000	35,000
Agency	40,000	40,000	40,000
Hotel/ Resort	35,000	35,000	40,000
Ticket Agency	35,000	35,000	35,000

Source: Processed Data, 2021

From table above, it is known that the customer category with the largest contribution margin was regular customers. Next, there were Partnership, Agency, and Company.

### **CRM Analysis**

Based on the observation and interview results, Basically, PTTWJ has not implemented a CRM system in carrying out business activities. The company only implements a simple CRM and it is not optimal. However, PTTWJ is currently planning to implement CRM in its business processes. The Company realizes that the CRM system can help the Company in strengthening relationships with customers. Thus, the profitability of each customer can be maximized and will affect the overall profit of the Company. PTTWJ needs to implement CRM as a whole and more optimally in business processes because customer becomes the priority of company. It takes the right steps and extensive knowledge about the implementation of the CRM system at PTTWJ. In addition, it is necessary to provide the best service continuously for the customers and periodically evaluate and update so that customers remain loyal to the Company.

### **CLV**

The calculation of CLV model used is the model developed by Gupta and Lehman. In this calculation the researcher has collected data such as revenue data from each customer from January 1, 2015 to December 31, 2017, the variable costs incurred by the Company from each customer category, and also took into account the number of existing customers at the end of each period and the number of new customers. in each calculation period. The researcher also calculates the discount rate every year. The discount rate is calculated based on the harmonic average by taking interest rate data from 2015 to 2017 through the official website of Bank Indonesia. The following table presents the calculation of the total CLV value from each category of customers registered and made transactions in three periods, namely 2015 to 2017 at PTTWJ.

Table 3. Total Score of CLV Year 2015-2017

Category	Total Visitor	CLV			Total CLV
		2015	2016	2017	
Regular	952.094	141.833.817.600	114.603.120.000	87.388.934.400	343.825.872.000
Company	94.240	10.934.681.600	7.420.320.000	4.919.328.000	23.274.329.600
Travel Agency	121.520	11.506.840.800	8.438.010.000	6.004.152.000	25.949.002.800
School	111.391	10.983.862.400	8.401.050.000	4.056.667.200	23.441.579.600
Partnership	157.153	17.232.832.000	12.330.240.000	7.738.525.200	37.301.597.200
Agency	86.099	9.190.944.000	6.932.520.000	4.869.350.400	20.983.814.400
Hotel/ Resort	92.035	8.278.166.400	5.230.470.000	6.507.302.400	20.015.938.800
Ticket Agency	156.189	12.981.813.600	10.751.580.000	8.884.612.800	32.618.006.400

Source; Processed Data, 2021

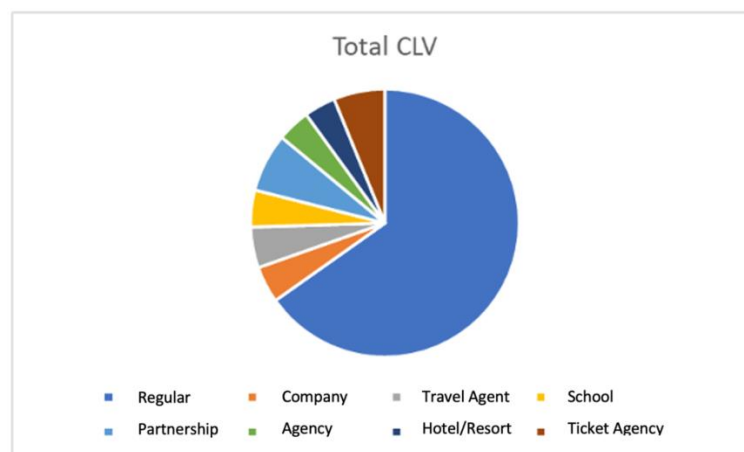


Figure.2 Total CLV PTTWJ  
Source: Processed Data, 2021

### 3.2. Discussion

In the table above, it is known that the CLV calculation from 2015 to 2017 is arranged based on the customer categories that exist in PTTWJ. Based on the results, it is known that there was a decrease in the value of CLV in all categories from 2015 to 2017. It means that there is a decrease in visitors in all categories. Based on the results of observations and interviews, PTTWJ basically does not implement a CRM system in conducting business activities. Companies use only simple and non-optimal CRM. However, PTTWJ now plans to implement CRM in its business processes. Companies recognize that CRM systems can help companies strengthen relationships with customers. Thus, the profit of each customer can be maximized and will affect the overall profit of the company.

PTTWJ needs to implement CRM as a whole and more optimally in business processes because the company's orientation is the customer. It takes the right steps and extensive knowledge on the implementation of CRM system in PTTWJ. In addition, it needs to provide the best service continuously for its customers and periodically evaluate and update so that customers remain loyal to the company. The results of this study are consistent with (Akroush *et al.*, 2011).



Based on the observation, the researcher thinks that the implementation of CRM system PTTWJ has not been able to be carried out optimally. However, in some business processes, components found in CRM have been implemented, such as in the HR or human resources division. HR has used information technology with business processes such as leveraging social media and the internet to find new employees. The marketing department has also done similar things such as participating in the national tourism community to promote the businesses it runs.

The three priority customer ratings are premium customers (customers with the highest CLV values (1 and 2) in the CLV calculation table), gold customers (customers who have the highest CLV values of 3,4 and 5 in the CLV calculation table), silver customers (customers who have the highest CLV values). the highest CLV values 6.7 and 8 in the CLV calculation table). The results of this study are consistent with (Ernst *et al.*, 2011). In addition, the CLV calculation becomes a calculation model for various companies for each customer. This is supported by research conducted by (Kumar and Rajan, 2020) and (Dahana, Miwa and Morisada, 2019).

#### **4. Conclusion**

The increasing competition in the business environment in the tourism industry that is getting tougher in recent times has forced business actors to continue to develop market share. Currently, tourism businesses have offered various products and services to customers so that customers are interested and loyal to the company. As a result, customers have many opportunities to choose products and services that match their needs or desires. Companies need to implement the system that includes all information related to customer needs and desires so that companies need to formulate an appropriate strategy for companies in facing increasingly fierce competition. The appropriate system to be implemented was CRM. The research found three things there are CRM was suitable to be applied to PTTWJ in its business processes, CRM implementation had not been maximized, and it needs to be improved so that it runs optimally Based on eight customer categories owned by PTTWJ with the highest total CLV value, customers are in the regular category. It is because customers with regular categories make more transactions than other categories. Meanwhile, customers in the hotel or resort category have the lowest CLV values. It is because customer transactions in this category are the lowest. Actually PTTWJ has been able to retain customers, but not all categories have increased the number of customers. This condition is caused by the uneven management of customers in each category so that there are categories of customers with drastic decline every year.

The limitation of this research is the CLV model developed by Gupta and Lehman (2003) is the simplest model. The reason of using this model is the availability of data on the research object. Researchers can not make observations on the marketing budget formulation process as a whole. This limits the researcher to understand the assumptions formulated by marketing in each category of customers in formulating the marketing budget used.

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