

# Customer Value and Customer Loyalty: Comparison and Application

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## ABSTRACT

Customer value and customer loyalty are hot research points. They have attracted many researchers in recent years, and they are the keys to increasing companies' profit, maintaining high-value customers, and cultivating potential value customers. In this article, we summarize some popular researches on customer value and customer loyalty. To go a step further, we analyze some valuable research in current marketing to support our view. After that, we discuss the difference and connection between customer value and customer loyalty to show readers how closely related they are. Lastly, we talk about applying customer value and customer loyalty to show how they can be utilized in current marketing.

**Keywords-** customer value, customer loyalty, comparison, application

## 1. INTRODUCTION

Under the circumstances of global economic globalization, enterprises are facing fierce competition. Therefore, customer value and customer loyalty have always been the core concern of various enterprises, and they are important research points to face the competition. Customer value is the satisfaction that a customer experiences (or expects to experience) by taking an action relative to the cost of that action. Customer loyalty indicates the extent to which customers are devoted to a company's products or services and how strong is their tendency to select one brand over the competition. The research of customer value and customer is of great significance, such as maintaining high profits, maintaining high-value customers, cultivating potential value customers. They provide suitable services for different customer groups. This saves and integrates enterprise resources and effectively achieves the optimal allocation of customer resource management.

There are many researches in the field of customer value and customer loyalty. For example, researchers

have explored customer value and customer loyalty in online shopping [1], customer relationship management [2], and product recommendation [3]. However, there are few reviews on customer value and customer loyalty so far. Existing researches do not compare and analyze the various methods of customer value and customer loyalty in detail, nor do they analyze the difference and connection between them. Moreover, the existing researches do not summarize and analyze the application of customer value and customer loyalty.

To address the above issues, in this paper, we summarized and analyzed the research related to customer value and customer loyalty in a systematic way. It also analyzes the difference and connection between customer value and customer loyalty and lists their applications.

The structure of this paper is as follows: chapter 2 summarizes customer value; chapter 3 summarizes customer loyalty; chapter 4 summarizes the comparison between customer value and customer loyalty; chapter 5 summarizes the application in this field, and chapter 6 is the conclusion.

## 2. CUSTOMER VALUE

There are many researches about customer value. For example, Kucia M et al. [4] proposed to identify the framework of the use of new technologies in customer value management from the perspective of sustainable development in the context of the concept of the engaged customer. Pu et al. [5] proposed an adaptive density peak algorithm based on the Gini coefficient. In their research, they used clustering algorithm evaluation index analysis and visualization analysis experiments. The results show that the model and algorithm of customer classification are more effective and fully reflect customer value. Heldt R et al. [6] proposed an RFM/P model to estimate customer values per product and then aggregate them to obtain the overall customer value. Their model overcomes the defect of traditional FRM that does not take the product perspective into account. Empirical applications demonstrate that RFM/P can combine customer and product perspectives. Additionally, when there are changes in customer purchase behavior regarding recency per product and frequency per product, RFM/P prediction accuracy was better than traditional RFM. Oh H et al. [7] proposed the hospitality and tourism researches on customer satisfaction (CS), service quality (SQ), and customer value (CV) published in mid-15-16 in a number of established hospitality and tourism journals. In their research, each study was categorized according to more than 50 criteria through a comprehensive coding scheme and found that hospitality and tourism studies relied heavily on cross-sectional data obtained through survey methods. In contrast, business studies made more use of experimental designs. Additionally, most studies were not based on a strong theoretical foundation, although CS studies preferred to embed theory. Wu Y L et al. [8] proposed the impact of six marketing-mix components on consumer loyalty through consumer value in social commerce (SC). In their research, through PLS analysis, they found that all components of the SC marketing mix (SCMM) have significant effects on SC consumer value. Additionally, SC customer value positively influences SC customer loyalty (CL). Daniels [9] proposed the concept of CVM and key issues to drive more effective marketing activity. In his research, he points out that there are two complementary approaches to CVM, they ensure that both parties to a business relationship receive added value. The first one attempts to measure and assess the perceived value of goods/services to customers. This information is used as the basis for continuous review and improvement of those goods or services. The second approach measures the value of a specific customer or customer segment to the organization and adjusts marketing activities.

In general, an organization needs to evaluate customer value. These different algorithms and models are designed to provide organizations with more

accurate and effective data when formulating strategies. However, the perspectives for each research were standing on different perspectives. For example, Kucia M et al. [4] is using technology to evaluate customer value according to engaged customers. Still, the RFM/P model proposed by Roddrigo et al. [6] evaluates the overall customer value according to the customers of each product. Moreover, Oh H et al. [7] designed the coding schema to identify the customer values based on the gathered survey, which is different from the experimental designs from business studies. To measure customer value more effectively, adjust marketing activities and develop marketing strategies, different organizations still need to use more targeted algorithms and models to obtain data according to the situation.

## 3. CUSTOMER LOYALTY

There are also many researches about customer loyalty. For example, Iglesias O et al. [10] examines the influence of corporate social responsibility (CSR) on customer loyalty and investigates the influence of co-creation on customer trust. Structural equation modeling was used to test the hypothesized relationships simultaneously. The results show that CSR influences customer loyalty through co-creation and customer trust. However, the indirect impact is the stronger of the two, implying that embracing co-creation activities and developing customer trust can make it easier for CSR practices to enhance customer loyalty. Chen C F et al. [11] proposes a conceptual model to investigate the relationships among customer participation, co-created values, and customer loyalty in an air transport context, and empirically test the model by using questionnaire survey data collected from Taiwanese airline passengers. The results prove that system satisfaction is related to satisfaction with the company, and both system satisfaction and company satisfaction positively impact customer loyalty. Skačkauskienė et al. [12] create an effective model of loyalty measurement, whose main solutions come from clarifying the role and assessment of customer loyalty. These solutions include selecting an appropriate concept, the loyalty specification, the identification of the necessary period for loyalty measurement, the differentiation of loyalty measurement according to the available data, and the stages of measuring loyalty. The results show that the customers' loyalty of the surveyed service providers is at a moderate level. The study results also show the superiority of the proposed model in measuring the status of customer loyalty and obtaining better solutions to develop customer loyalty in the service sector. Wassouf W N et al. [13] provides a methodology for telecom companies to target different-value customers by appropriate offers and services. Firstly, customers were segmented based on the new approach TFM (Time-frequency-monetary), and the level of loyalty was defined for each segment or group. Secondly, the loyalty

level descriptors were taken as categories, choosing the best behavioral features for customers, their demographic information such as age, gender, and the services they share. Thirdly, several classification algorithms were applied based on the descriptors and the chosen features to build different predictive models used to classify new users by loyalty. Finally, those models were evaluated based on several criteria and derive the rules of loyalty prediction. After that, by analyzing these rules, the loyalty reasons at each level were discovered to target the most appropriate offers and services. Kumar V et al. [14] draws upon past research to review important findings related to customer behavior and attitude in the context of customer loyalty. Further, research related to linking loyalty to profitability and forward-looking metric such as the customer lifetime value is reviewed to propose a conceptual framework for building and sustaining loyalty and profitability simultaneously at the individual customer level. A two-tiered rewards structure is presented as a means for marketers to operationalize the framework. The conceptual framework hopes to serve as a platform to understand the evolving dominant logic of loyalty programs for building and sustaining loyalty in the twenty-first century and inducing further research in that direction.

Customer loyalty can be strengthened by embracing co-creation activities and developing customer trust. Chen C F et al. [11] find that both system satisfaction and company satisfaction positively impact customer loyalty, which means improving system satisfaction and company satisfaction can also enhance customer loyalty. Based on the first two research, there are several approaches to develop customer loyalty. An effective model of loyalty measurement could help us filter out target customers and obtain better solutions to foster customer loyalty. So, segmentation is applied in the selection of different-value customers. Wassouf W N et al. [13] provided methodology is an excellent trail system. The means take advantage of feasible and strict steps to single out the valuable and profitable customers. After that, merchants can avoid spending extra costs on insignificant or less profitable customers, make a new way to maximize the profits. Recalling past data is also a significant method to explore customer loyalty. Within the previous records, customer behavior and attitude cannot be ignored. The research drawn by Kumar V et al. [14] proposed a meaningful structure, two-tiered rewards structure, which can be regarded as a means to operationalize the framework to build and sustain loyalty.

## **4. COMPARISON OF CUSTOMER VALUE AND CUSTOMER LOYALTY**

### ***4.1 Difference between customer value and customer loyalty***

There is some difference between customer value and customer loyalty. A loyal customer is only loyal at a point in time. If you create more value, chances of retaining the customer are higher, and if you continue to create value, your customer will continue to be loyal (versus the term “be loyal”). Chen S C [15] studied the difference between customer value and customer loyalty in this field. They aimed at providing an insight into the effects of competition on customer value delivery for customer loyalty. Data were collected using a questionnaire on dyads of service employees and customers. The techniques of ANOVA, ordinary least squares, and logistic regression were used to analyze the dyad data in terms of research purposes. Results show that competition moderates the relationship between customer value and customer loyalty from the consumer perspective. Also, competition is a predictor of customer loyalty from the employee perspective. Insights into this asymmetry in the view on competition between employees and consumers are found. Findings of the moderating effects of competition on the customer value and customer loyalty relationship suggest the significance of competition in the service encounter. In addition, this study found that the predictive validity of the loyalty model for consumers is significantly higher than that for employees. This finding suggests that the factors driving customer loyalty are better captured from the consumer perspective. Findings of the impact of competition on the consumer’s experience of different types of value provide insights into where to invest in generating customer value to achieve desired customer loyalty. This study also suggests to managers how service employees could be recruited and managed to achieve a competitive service advantage. This study extends our understanding of the customer value–customer loyalty relationship by uncovering the significant role of competition from a dyadic viewpoint.

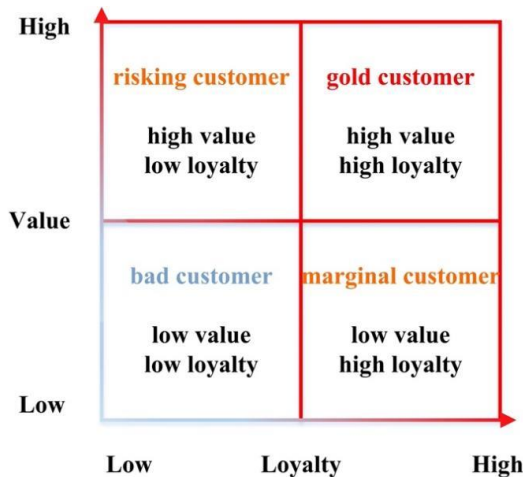
### ***4.2 The connection between customer value and customer loyalty***

The last section shows that employees should provide customers high value about the business transactions so that they can build strong connections that impel the repeat business. Customer value and customer loyalty are different, but they have a symbiotic relationship.

Flint et al. [16] state that customer value anticipation is a strong driver of satisfaction and loyalty. There is a notable lack of information about customer value anticipation and evidence that if customers care about

suppliers, anticipate what they value. Therefore, the authors report on two survey studies to prove that customer value can improve customer loyalty. Marketing managers know that customer value is the key to survive and grow in a competitive market. Nowadays, firms are focusing on market-oriented so that they can change customers' needs because market-oriented improves the market performance of suppliers. Business customers have generally been reducing the number of suppliers they work with. Anderson et al. [17] also explain that customer satisfaction and loyalty are positively related to marketer profitability and market share. Thus, many firms have developed distinct competencies for customer satisfaction measuring. A common assumption is that customers with repeated satisfaction from the supplier will be motivated to keep the positive relationship and may not look elsewhere. Customer satisfaction will have a positive effect on customer loyalty. Flint et al. [16] also have some empirical evidence that suppliers need to be better than their competitors on providing customers value and be good at figuring out what their customers will value in the future business.

The relationship between customer value and customer loyalty is shown in Figure 1.



**Figure 1.** The relationship between customer value and customer loyalty

From Fig.1, we can see that high customer value makes a high customer loyalty, providing suppliers a healthy business position. At the same time, customer loyalty can also help the suppliers improve their customer value anticipation so that the suppliers will have enough power to compete with others. The possible factors that influence customer loyalty are different from each field. However, generally, customer loyalty is a positive correlation with customer value.[18]

Customer loyalty is a vital factor in measuring customer value. In addition, customer loyalty has a powerful impact on firms' performance and is considered an important source of competitive

advantage. It is ten times less expensive for an organization to retain its existing customers than they acquired new. [19] Thus, it is essential to find proper and reliable methods for measuring customer loyalty since measurement sorts out the most profitable customer.

### 5. APPLICATION OF CUSTOMER VALUE AND CUSTOMER LOYALTY

There are many applications of customer value and customer loyalty in different fields. For example, some researchers explore the statistical modeling and simulation of online shopping customer loyalty based on machine learning and big data analysis [1]. Their research mainly uses a machine-learning clustering algorithm to simulate customer loyalty and construct an online customer loyalty measurement model. Create a dataset by the web crawler from the target website to the temporary web page database file. Collect user data and online shopping purchase data through the web page. Then use the k-means interactive mining algorithm based on the Hash structure to perform data mining on the multidimensional hierarchical tree of corporate credit risk. Keep adjusting the thresholds based on specific requirements and select an effective association until you get the best results. In the overall fit test of the model, the root means square error approximation (RMSEA) value is 0.053, between 0.05 and 0.08. The results show that the model designed in this study achieves a relatively good fitting effect and strengthens customers' perception of shopping websites. Relationship trust plays a greater role in maintaining customer loyalty.

In the intensely competitive food industry, increasing and sustaining repeat buying behavior among store customers can significantly increase profits. Huang et al. [1] have analyzed store loyalty. The researchers conducted six focus group interviews with consumers in a mid-western US city. They investigated factors that influence a customer's food store choice and consumers' definition of store loyalty. Evidence was found that participants' repeat buying behavior was linked to multiple characteristics: relative attitude antecedents, situational influences, and social norms.

Research shows Price, one-stop shopping, product variety, store environment, and service were the most frequently identified characteristics that drew participants to their preferred store. Within the context of a customer loyalty framework, participants matched the description of spuriously loyal: high repeat patronage but the low relative attitude towards preferred stores. The results have specific implications for more profitable food store management and further useful research on customer loyalty.

Ghani et al. [20] proposed an intelligent approach to measure customers' loyalty to a specific product and

assist new customers regarding a product's key features. Researchers use an aggregated sentiment score to calculate customers' sentiment towards online reviews from Amazon.com. Then input the data into a fuzzy model to measure customers' loyalty to a product. The proposed approach focuses on identifying the polarity of the reviews that may be positive, negative, and neutral. First, pre-processes the input text via tokenization, Lemmatization, and removal of stop words and then applies a fuzzy logic approach to take decisions. To find customer loyalty and help in decision making, the fuzzy logic approach is applied using a set of membership functions and a rule-based system of fuzzy sets that classify data in various types of loyalty. The implementation of the approach provides high accuracy of 94% of correct loyalty to the e-commerce products that outperform the previous approaches.

Product recommendation is a business activity that is critical in attracting customers. Improving the quality of a recommendation to fulfill customers' needs is important in fiercely competitive environments. Liu D R et al. [21] developed a novel product recommendation methodology that combined group decision-making and data mining techniques in the mobile telecommunications industry. The analytic hierarchy process (AHP) was applied to determine the relative weights of RFM variables in evaluating customer lifetime value or loyalty. Clustering techniques were then employed to group customers according to the weighted RFM value. Finally, an association rule mining approach was implemented to provide product recommendations to each customer group. The experimental results demonstrated that the approach outperformed one with equally weighted RFM and typical collaborative filtering (CF) method. Also, researchers focus on predicting which of the customers may be at risk of changing services and will make those subscribers the focus of customer retention efforts. They propose a churn-prediction technique that predicts churning from subscriber contractual information and call pattern changes extracted from call details. This proposed technique can identify potential churners at the contract level for a specific prediction period. The empirical evaluation results suggest that the proposed call-behavior-based churn-prediction technique exhibits satisfactory predictive effectiveness when more recent call details are employed for the churn prediction model construction. Furthermore, the proposed technique can demonstrate satisfactory or reasonable predictive power within the one-month interval between model constructions and churn prediction.

The application of data mining techniques in CRM is an emerging trend in the industry. Despite the importance of data mining techniques to customer relationship management (CRM), there is a lack of a comprehensive literature review and a classification scheme. Ngai E et al. [22] give the first identifiable

academic literature review of applying data mining techniques to CRM. It provides an academic database of literature between the periods of 2000–2006 and proposes a classification scheme to classify the articles. Eighty-seven articles were finally selected, reviewed, and classified. Each of the 87 selected papers was categorized on four CRM dimensions (Customer Identification, Customer Attraction, Customer Retention, and Customer Development) and seven data mining functions (Association, Classification, Clustering, Forecasting, Regression, Sequence Discovery, and Visualization). The results indicate that the research area of customer retention received the most research attention. Of these, most are related to one-to-one marketing and loyalty programs, respectively. And, among 34 data mining techniques that have been applied in CRM, neural networks are the most commonly used technique. The classification model is the most commonly applied in CRM for predicting future customer behaviors.

## 6. CONCLUSION

This article reviews the research of customer value and customer loyalty in the business field. Specifically, we analyze the valuable research in customer value and loyalty and discuss the difference and connection between them two. Finally, we discuss the application of customer value and customer loyalty in the business field by analyzing multiple cases using data mining or machine learning models. This research has reference value for any company that wants to increase customer retention. Through the analysis of a number of typical cases, it helps companies find a method that suits them well.

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