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A Framework Towards Customer Lifetime Value's Macro and Micro Dimensions in the Service Sector: A State-of-the-Art Review

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ABSTRACT

Today, the role of customer relationship management as a strategic tool in the development of production and service organizations as well as attracting and retaining customers in competitive industries is undeniable. The main core of customer relationship management is identifying, valuing, segmenting customers and optimally allocating resources to customers according to the value they bring to the organization. Customer lifetime value is a tool for calculating the value that a customer brings to businesses during the lifetime of their relationship. The purpose of this article is to present the framework of variables affecting CLV in the service sector by systematic review method. 83 variables were extracted from the 31 final selected articles in the field of CLV in various service industries. Based on the results, five categories of variables have an effect on CLV in the service sector, which include customer variables, financial variables, product variables, selling variables, and demographic variables.

Introduction

Nowadays, customer relationship management (CRM) has been proposed as a new phenomenon. Companies are increasingly earning money from building and maintaining long-term relationships with their customers. CRM is a business strategy for managing mutual relationships with customers

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in order to optimize value and customer long- term satisfaction (Bohling et al., 2006). The essential parts of CRM activities are understanding customers' profitability and retain profitable customers. Customer lifetime value (CLV) is one of the most important tools to achieve profitable customer relationship management. There are several reasons that led to increased interest in the concept of customer lifetime value. Firstly, there is an increasing pressure on companies to respond to the market and customers. Secondly, advances in information technology have made it easy for companies to collect vast amounts of data on customer transactions. This allows companies to use data about manifest preferences, rather than intentions. This allows companies to use data about obvious preferences, rather than intentions. Thirdly, since all customers are not equally profitable, identifying profitable customers and segmenting them is very important for firms. Therefore, calculating customer lifetime value is substantial for businesses. In other words, customers represent the most important assets of a company. CLV provides the possibility to calculate the current and future value of customers. Customer relationship management strategy and allocation of marketing resources is based on CLV. Therefore, managers should predict the retention rate as well as the purchasing behavior of their customers (Castéran et al., 2021). A number of previous articles investigated the factors affecting customer lifetime value and presented models related to customer lifetime value. The first category of models includes models that attempt to find the effect of marketing programs on customer acquisition, retention, and expansion such as cross-selling. The second category of models examines the relationship between different components of CLV. For example, Thomas (2001) discussed about the relationship between customer acquisition and customer retention. Also, in this group, some articles focus on identifying the relative importance of different components. The final group of models links CLV to firm value (Oblander et al., 2020). Customer lifetime value indicates customer satisfaction and loyalty to the product, company and brand. Customer relationship management is also an efficient and effective strategy for acquiring, and maintaining customers and increasing their satisfaction. One of the most important tools to achieve profitable customer relationship management is to calculate customer lifetime value. CLV calculation has many applications such as performance measurement, customer targeting, marketing resource allocation, product presenting, pricing and customer segmentation (Rosset et al., 2002; Haenlein, 2007; Benoit & den Poel, 2009). This paper aims at suggesting a comprehensive framework for Variables affecting the measurement of customer lifetime value in the services sector. This paper is organized as follows. Section 2 reviews the main concepts of this study and previous studies related to measure CLV in services sector. Section 3 presents a methodology of research. Next in Section 4 we propose Research findings. Finally, Section 5 concludes this paper with the remark on future research directions.

Literature review

In this section, first we introduce the research concepts and then provide a summary of background articles published in the field of CLV in service sector.

Relationship marketing

In the past few decades, traditional marketing approach have become obsolete and relationship marketing has replaced it. Relationship marketing has changed the focus of marketing from attracting short-term and discrete customers to retaining loyal customers. Some researchers have described it as the biggest paradigm shift that the field of marketing has ever had. Eisingerich & Bell (2006) defined relationship marketing as a strategy to attract, maintain and improve relationships with customers. Relationship marketing is a long-term approach, its main goal is to provide long-term value to the customer, and the success criterion is long-term customer satisfaction. So the main goal of relationship marketing is loyalty, and sometimes, it is even equivalent to the concept of relationship marketing itself.

In addition, it should be noted that CRM as a business strategy finds its origin in the theoretical and conceptual foundations of relationship marketing. Also, relationship marketing focuses on satisfying the needs of customers. This requires the establishment of stable relationships and can only be achieved with employees who have more ability, training and responsibility. It is also necessary to achieve teamwork with customers and facilitate their communication with the firm. The main assumption is that if this is implemented correctly, customer loyalty will be achieved and this will lead to more sales and profits (Lopez, 2020). CRM combines the potential of relationship marketing strategies and information technology to build profitable and long-term relationships with customers and other key stakeholders (Shukla & Pattnaik, 2019).

As a result of Payne and Frow (2017) study, RM research is characterized by three approaches that have contributed significantly to its evolution: The Nordic, North American and Anglo-Australian approaches. As per the Nordic approach, RM inhabit the intersection of services marketing, customer relationship economics and interactive network theory. The North American approach brings up RM as dyadic relationships between buyers and suppliers. According to the Anglo Australian approach, RM is at the intersection of services marketing, customer relationship economics, multiple stakeholders and quality management.

Researchers presented different models for relationship marketing. In Morgan and Hunt's (1994) studies, trust and commitment are relationship marketing centers. Commitment is influenced by four variables: relationship benefits, relationship termination costs, shared values, and trust. Trust also consists of three variables: shared values, communication and opportunistic behaviors. In fact, they have considered commitment and trust as the main variables in business relationships, which lead to five important outcomes under the title of acquiescence, propensity to leave, cooperation, functional conflict and uncertainty. Sin et al. (2005) considered relationship marketing as a one-dimensional structure including six key factors, which include trust, bonding, communication, shared value, empathy, and reciprocity. Nelson Ndubisi (2006) considered the dimensions of relationship marketing including: trust, communication, commitment and conflict handling and investigated the effect of gender in the relationship between dimensions on customer loyalty. The result of his research showed that the four dimensions of relationship marketing are directly related to customer loyalty and gender as a mediating variable only mediates the relationship between trust and customer loyalty. Adjei and Clark (2010) presented a new model of relationship marketing and concluded that relationship marketing leads to behavioral loyalty. Of course, the consumer's personality traits such as consumer innovativeness, variety seeking, and relationship proneness play a decisive role in creating this relationship. Hoffman et al. (2011) investigated the role of relational marketing in the management of creating relationships with investors. In this model, relationship orientation, relationship evaluation mode, trust, commitment and reciprocity were considered as dimensions of relational marketing, which were introduced as effective tools to create a relationship with the investor and determine the value of the shareholders.

Customer relationship management

The conditions of supply and demand in recent decades, as well as the disappearance of geographical boundaries for business and the consequent intensification of competition, have caused the customer to emerge as the main pillar and main axis of the organization's activities. The truth is, in today's competitive business environment, many companies focus on the concept of customer loyalty and profitability to increase market share. A satisfied customer is the reason for the survival of companies, and satisfying customer’s needs should be the main goal of every firms. Therefore, in order to provide customer satisfaction as a factor of organizations' superiority, it is necessary to establish customer relationship management systems. In fact, due to the increase in service organizations, the increase in competition, the diversification of customers and other factors, even satisfied customers turn to other institutions to receive services, so it must be accepted that although satisfaction is a necessary factor to retain customers, it is not sufficient. Therefore, firms should try to retain their customers using other factors. Loyalty is creating an obligation in a customer to do business with a particular organization and buy goods and services. Customer loyalty is a customer's intention to remain with an organization. The best approach to maintain and maintain customers is to create great satisfaction for the customers and pay attention to what is considered valuable for them, so that as a result, their loyalty to the organization is strengthened. What guarantees the survival of the organization is finding a competitive advantage and attracting more customers (Al Badi, 2018). Therefore, it is the duty of every organization to communicate with its customers through a detailed and regulated process.

Customer relationship management is defined as strategy, process and technology. Kotler and Armstrong (2004) defined CRM as the overall process of creating and maintaining profitable customer relationships by providing more value to customers and increasing their satisfaction. CRM is a cross-functional strategic approach focusing on creating improved shareholder value through the development of relevant relationships with key customers and customer segments (Boulding et al., 2005; Payne & Frow, 2005). CRM is an organizational approach to understanding and influencing customer behavior through meaningful communication to improve customer acquisition, customer retention, customer loyalty, and customer profitability (Guerola-Navarro et al., 2021). Customer relationship management is a very important tool for firms, it helps to enhance the customer’s loyalty and satisfaction to manage it for long-term between corporations and customers (Herman et al., 2020). Customer relationship management is an organization-wide approach, not only in gaining knowledge about customers, but in improving and automating work processes that create value for customers, suppliers and employees of the organization (Sahaf & Qureshi, 2011).

Many CRM researches appertain to develop a comprehensive model of customer profitability since the question ‘Who are profitable customers?’ is a starting point of CRM (Hwang et al., 2004). CRM creates many benefits for customers and companies. Mohammadhossein & Zakaria (2012) summarized CRM benefits for customers into the following cases: Improve customer services, increased personalized service or one to one service, responsive to customer’s needs, customer segmentation, improve customization of marketing, multichannel integration, time saving and improve customer knowledge.

The successful implementation of CRM is not easy and seems to be a complex task. Almost 70% of all CRM implementation projects are not able to achieve their expected goals. Farhan et al. (2018) identified and prioritized the critical success factors (CFS) of CRM. CFS of CRM were classified in four categories as organizational factors, technological factors, process factors and project factors. To measure the success of CRM, companies must evaluate its performance. Reinartz and colleagues (2004) found that the implementation of the customer relationship process has a relatively positive relationship with the economic, objective and perceptual performance of the company. They proposed process-oriented indicators to evaluate the effectiveness of this concept in three separate stages of initiation, maintenance and termination. O'Reilly & Dunne (2004) have presented a model based on five dimensions of financial, quality, customer, user requirements and standards to measure the performance of customer relationship management measures. Researchers have also provided indicators for each of the mentioned dimensions. One of the relatively comprehensive researches in the field of measuring customer relationship management is the study of Kim and Kim (2009). In this model, it measures its performance with a resource-based approach and based on the balanced scorecard framework. In this model, the causal relationships between the factors affecting the performance of customer relationship management have been taken into account. In terms of infrastructure, information technology, management attitude, leadership, employee satisfaction and behavior, market orientation and organizational alignment are considered. In the process dimension, the attraction, retention and development of customers is considered. In the dimension of customers, the value, satisfaction and loyalty of customers and in the dimension of organizational performance, the share of customer value in the value of shareholders, the rate of return of capital and assets are emphasized. A review of evaluation models in different areas such as strategy, operations, and production, which are relatively mature in this field, includes several important points. The first point is that every evaluation system must include the customer's point of view. Since the customer is the ultimate goal of every business strategy; According to Norton and Kaplan, evaluation based on the customer's point of view acts as a bridge between strategy and organizational performance. Another important thing to create a performance evaluation framework is to evaluate from different perspectives and aspects.

CRM uses technology leverage to coordinate organization interactions with the aim of building long-term customer loyalty (Wu et al., 2007). Philip Kotler and Keller (2014), a well-known marketing expert, considers electronic customer relationship management (eCRM) to be part of the concept of E-commerce, which describes the use of electronic tools and platforms to guide the tasks of companies and organizations. eCRM enables institutions to provide services to their customers faster and more accurately, in a wide range of time and space and at a lower cost, and to customize and personalize products and services to customers. The impact of eCRM is nothing less than a revolution. E-commerce and the Internet revolutionize the customer relationship management process for most companies. eCRM makes it possible for customers to communicate more effectively with the company, to reveal their potential as customers, so that both the company and the customer benefit from this relationship.

Value-based marketing

The concept of value connects marketing and economics in a useful framework for strategy development and pricing. From a marketing point of view, value can be defined as a set of benefits perceived by the customer in relation to the price and the effort invested to obtain it. Consumers only buy products that are valuable to them. It is worth mentioning that the difference between value and positioning is that value expresses the logical relationship between benefits and price; and positioning, although it contains the same elements, simply refers to the image or perception of a product, brand or company (Classen & Friedli, 2019).

The current trend is that sales should not ignore the future needs of customers for quick and ephemeral product exchange. What firms should really be looking for is building a long-term relationship that benefits both the customer and the company at the same time. That's because it costs more to get new customers than to keep them. Just satisfying their needs is not enough, a step forward is necessary, their retention in the long term must be achieved. This is the goal that links relationship marketing with the concept of value. Establishing this relationship is only possible with a clear understanding of customer’s needs, habits and preferences. In fact, Value-based marketing theory concentrate on the continuity of value delivery and customer satisfaction, connoting long-term relationships (Xie et al., 2022). Therefore, the product must satisfy customers, without neglecting the market context, competition and company goals (Keränen et al., 2020).

Value-based marketing is a competitive approach based on "market-oriented, customer-oriented and value-oriented" whose most important goals are "satisfaction, success, superiority, sustainability and social support" through value creation and value addition and its dynamic and sustainable presentation. The final result of businesses and transactions is value creation and value addition. A successful person is one who knows "value" from the perspective of audiences and customers and is responsible for "values". Value-based marketing is an approach based on market orientation and customer orientation in the real sense, which evaluates any type of transaction in two words, "worth" or " It is not worth " from the point of view of the customer and the market. Value has various types and dimensions that are never complete and fixed, and for this reason, value-based marketing is an approach based on techniques and skills, tools, solutions, processes, dynamic and diverse activities. The value may be displayed as:

$$Value = \frac{\sum Benefits}{Price + Effort}$$

Value is the relationship between the sum of all perceived benefits and the price and effort required to obtain the product. Value is a force that drives sales and market share and provides a strong incentive for customers to buy. Therefore, the value is an output / input ratio, which measures the consumer's benefit or "profitability" that they receive from their purchase. This ratio indicates that value increases when the benefits increase, or when the price and/or effort required decreases. If the price increases more than the benefits provided, the value will decrease and the amount of customer demand will decrease (Lopez, 2020).

Customer lifetime value

One of the biggest challenges of customer-oriented organizations is cognition of customers, segmenting them into different groups, ranking them and predicting new customers; so as to create a long-term guarantee for business continuity. In other words, Customer lifetime value (CLV) is an essential component of customer relationship management (CRM) and is one of the main criteria used to evaluate marketing decisions (AboElHamd et al., 2021). This concept is defined as the present value of all future profits from the customer (Dwyer, 1997). CLV is defined by Kotler et al. (2002) as follows: "Present value that can be deducted from future profit during the period of exchange with the customer. Kumar et al. (2006) considers CLV as the set of values that customers bring to the organization during their lifetime. He also considered that the calculation of customer lifetime value leads to profitability and optimal allocation of resources. The basic formula for calculating CLV for customer i at time t for a finite time horizon T (Berger & Nasr, 1998) is:

$$CLV_{i,t} = \sum_{t=0}^{T} \frac{Profit_{i,t}}{(1+d)^t}$$

$$CLV_i = \sum_{t=1}^{T} \frac{Revenue_{i,t}}{(1+d)^t} - \sum_{i=1}^{T} \frac{Cost_{i,t}}{(1+d)^t}$$

Customer lifetime value provides important insights to managers regarding the pathology of the future health of the business by providing an assessment of the profitability of individual customers as well as providing a structured approach to predicting future cash flow (Kumar & Reinartz, 2016). From a managerial perspective, when companies adopt a CLV-based segmentation approach, they can make consistent decisions about how to attract and retain customers and identify customers who are not interesting enough to invest in. It enables the company to make more effective decisions about the allocation of resources to each customer segment (Kumar & Rajan, 2009). In addition, the results of customer lifetime value calculated for different segments can be used to explain marketing and sales strategies by the firm.

In the literature review, there are classifications for CLV models. One of these divisions is proposed by Gupta et al. (2006). In their reviews, they have mentioned six modeling approaches, include, RFM models, Probability models, Econometric models, Persistence Models, Computer science models and Diffusion growth or model. RFM model based on recency, frequency, and monetary. In fact, this model uses these three dimensions related to customer exchange data to analyze their behavior. The indicators of this model are defined as follows: Recency of exchange (R): This index refers to the time interval between the last purchase made by the customer and the end of the specific period (the end of the time period under investigation). The lower this distance indicates the higher value of this index in the model. Frequency (F): This indicator shows the number of exchanges that a customer has made in a certain period of time. The higher number of exchanges indicates the higher value of this index in the model. Monetary value of exchange (M): This indicator shows the amount of money that a customer has spent in a certain period of time for exchanges. The higher amount of money spent indicates the higher value of this index in the model. This model is a behavior-oriented model and deals with customer segmentation and evaluating and predicting customer behavior in the future. Probability models are based on Pareto/NBD model and Markov chains. Econometric models that are divided into three types and according to Gupta they share the main philosophy of probability models and usually use customer attraction, retention, and customer retention or a combination of them to estimate the value of the customer's lifetime. Persistence Models that focus on attraction, retention and cross-selling behaviors and can predict the long-term behavior of one or more variables. Computer science models that are based on theories (e.g., utility theory) and include neural network models, decision tree models, spline-based models such as generalized additive models (GAM), multivariate adaptive regression splines (MARS), classification and regression trees (CART); and support vector machines (SVM). Diffusion growth or model, Prediction of attracting customers in the future is usually done in two ways: disaggregate data and aggregate data, in aggregate data method, the growth model is used to predict the number of customers. There are many articles in the field of CLV calculation models and effective variables in its calculation. In this article, we seek to identify influential variables in the calculation of CLV in the service sector.

Regarding the importance of the service sector, it should be mentioned that the historical structure of the economic sectors in terms of the share of employment shows a decrease in the amount of employment in the agricultural and industrial sectors and an increase in this share in the service sector. This historical development mainly started in the 1950s and has grown rapidly in recent decades. So that the employment share of the service sector in the economy of advanced countries has been on average 60 to 70 percent in recent years. By 2019, services accounted for 55 percent of GDP and 45 percent of employment in developing economies. In developed economies, services account for an even larger share of economic growth—fully 75 percent on average (WBG, 2021). Customers' segmentation and identification are important discussions in services sector. Therefore, CLV calculation is necessary in-service industries as the core of customer relationship management. In this section, a summary of previous articles in this field is presented.

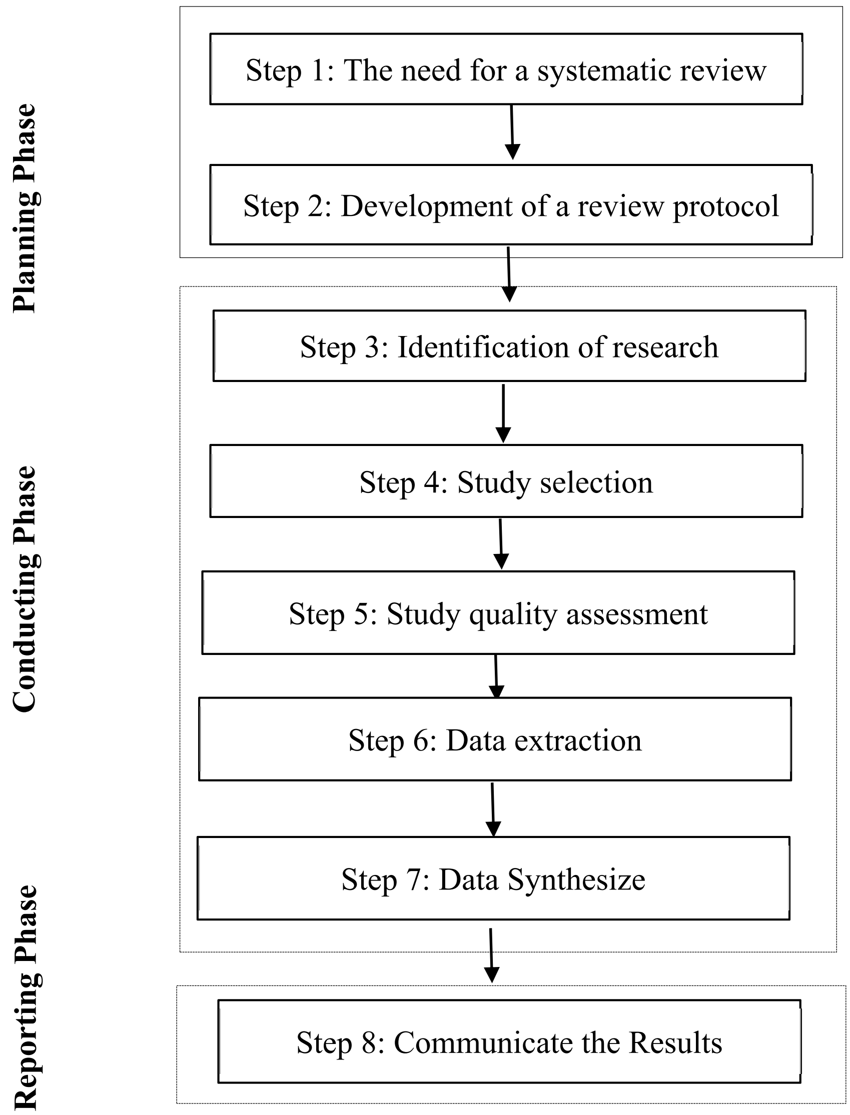
Table1.

A summary of background studies

Scholars	Subject	Findings
Donkers et al. (2007)	Modeling CLV: A test of competing models in the insurance industry	This paper studies the capabilities of a range of models to predict CLV in the insurance industry. In their modeling approach, they consider both relationship-level and service-level models. The relationship-level models focus on customer retention and profits aggregated across services. The service-level models take a disaggregated perspective, and can also account for cross buying of services.
Mosaddegh et al. (2021)	Dynamics of customer segments: A predictor of customer lifetime value	In this study the variables affecting on customer lifetime value in the banking industry Were identified. Researcher also found a pattern by a few groups of Market Trend Initiators whose transitions are followed by overall market trends which gains insight into the dynamics of future markets.
Estrella-Ramón et al., 2017	A model to improve management of banking customers	This article has suggested a new and comprehensive CLV model designed to carefully assess and classify banking customers using individual measures and covering customers' relationships with a portfolio of products of the company. This proposed model enable decision-makers to improve the understanding of the value of each customer and their behaviour towards different financial products.
Hwang et al., 2004	An LTV model and customer segmentation based on customer value: a case study on the wireless telecommunication industry	In this article, a case study has been done to calculate customer value and customer segmentation in a wireless communication company. They offered an LTV model considering past profit contribution, potential benefit, and defection probability of a customer. They also cover a framework for analyzing customer value and segmenting customers on the base of their value.
Gupta et al., 2006	Modeling Customer Lifetime Value	In this paper, customer acquisition, customer retention, and customer expansion were considered as influential variables in customer lifetime value. Also, in this article, the models for calculating CLV have been examined and they were classified into six groups.
Kim et al., 2006	Customer segmentation and strategy development based on customer lifetime value: A case study	This paper aims at suggesting a new Life Time Value (LTV) model and customer segmentation considering customer defection and cross-selling opportunity. In fact, they propose a framework for analyzing customer value and segmenting customers based on their value. After segmenting customers based on their value, strategies building according to customer segment will be illustrated through a case study on a wireless telecommunication company.

Methodology

In this article, the practice method id a systematic review of published articles in the field of CLV in service sector. Systematic review is a systematic search to evaluate and interpret researches and searched documents related to the research question, and its goal is to achieve a comprehensive understanding of the researches (Grant & Booth, 2009). Systematic review is a comprehensive review of texts that focus on a clear research question. Systematic review has a completely precise and pre-arranged protocol. Kitchenham (2004) provided guidelines for the implementation of systematic review research and considered three main phase including planning, conducting and reporting and eight steps for a systematic review.



Planning phase

Step1: The need for a systematic review

The need for a systematic review flow from the requirement of researchers to summarize all existing information about some topics. This research was carried out according to the existing vacuum in the field of comprehensive framework for variables affecting CLV in the service sector.

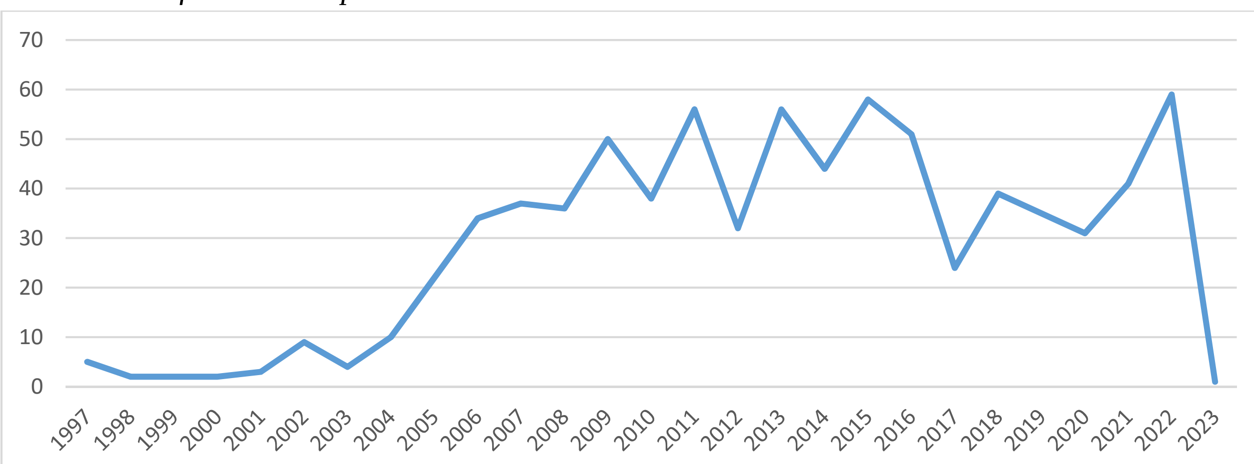
Step 2: Development of a Review Protocol

Most experts consider determining the research protocol as the most important step in systematic review research. The protocol is an essential element of any systematic review. The protocol is a document in the hands of the researchers that provides a detailed plan of what needs to be done by placing them in the real research environment and considering all the details. The protocol directs the study forward and prevents possible bias.

The most significant activity during protocol is to formulate the research question. If the research question is defined precisely and clearly, the path for the researcher will be paved until the end of the research. Formulating a clear, precise and right question prevents the researcher from deviating from the right research path. The question of the present research is:
What are the variables affecting CLV in the service sector?

Conducting phase
Step 3: Identification of research
The term customer lifetime value has been growing in recent decades. The chart below shows the number of documents published in the CLV field.

Figure 2.
The number of documents published in CLV



The regional distribution of documents published in the CLV field from 2004 to 2023 is shown in the figure below.

Figure 3.
Regional distribution of CLV documents

The goal of a systematic review is to find a large number of primary studies relevant to the research question. It is necessary to assign and follow a search strategy. To perform this step, the words related to the research question were searched in the scientific databases of Web of Science and Scopus.

The search formula is as follows:

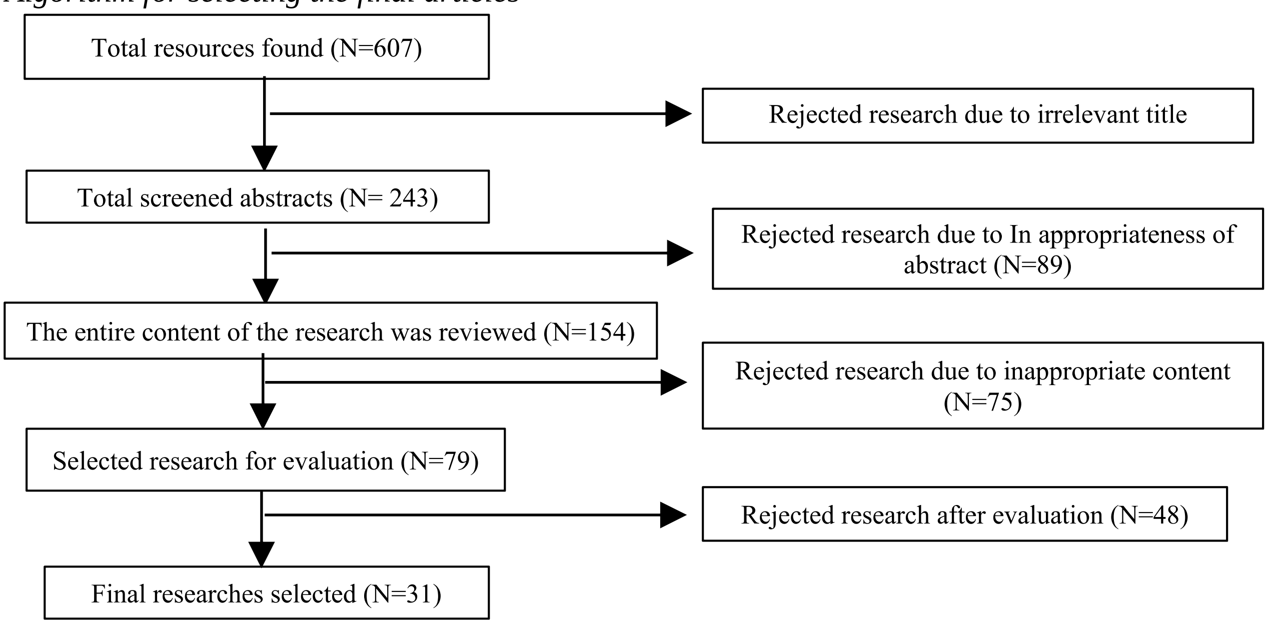
"Customer lifetime value" AND ALL "service" OR "Customer life time value" AND "service" OR "CLV" AND "service" OR "CLV" and "banking" OR "CLV" and "insurance"

Step 4: Study selection

Study selection is a multistage process. At first, selection criteria should be determined. Language, year, type of sources are the primary criteria. Words related to the research question were searched in two scientific databases from 1996 to 2023. 1996 was chosen as the base year. Because the first articles in the field of customer lifetime value were published this year. Also, articles whose language was English were selected. Articles published in reputable scientific journals were included as research sources.

Figure 4.

Algorithm for selecting the final articles



In this section, the Inclusion and exclusion criteria of the articles were specified. In the end, 31 articles were selected to extract the variables affecting CLV in the service sector.

Step 5: Study Quality Assessment

There is no agreement among experts in the definition of quality. Some consider the internal and external validity of articles as quality. In this research, attention has been paid to the type of articles. Out of 31 selected articles, 29 articles have been published in English language management and artificial intelligent journals. Two articles were published in the international conference. To evaluate the quality of the articles, the relevance of the content of the articles to the research question and their internal and external validity were considered. Two conference articles were very practical and useful in terms of content in order to answer the question of this research.

Table 2.

Distribution of articles based on journals and impact factor

Journal name	Number of articles	Impact factor (SJR)
Journal of Marketing	1	7.46
Marketing Science	1	6.58
Journal of Service Research	1	4.01
Quantitative Marketing and Economics	1	2.88
International Journal of Hospitality Management	2	2.51
Journal of Business Research	2	2.32
Expert Systems with Applications	4	2.07
Journal of Travel & Tourism Marketing	1	2.05
Journal of Air Transport Management	1	1.56
European Journal of Marketing	1	1.48
Neural Computing and Applications	1	1.07
Industrial Management & Data Systems	1	1.01
Accounting & Auditing Review	1	0.735
Journal of Industrial Engineering International	1	0.67
International Journal of Quality & Reliability Management	1	0.59
African Journal of Business Management	1	0.416
Information Technology and Management	1	0.43
Journal of Intelligent & Fuzzy Systems	1	0.39
Intelligent Decision Technologies	1	0.24
International journal of Electronic Customer Relationship Management	1	0.21
Asian Social Science	1	0.124
Procedia- Social and Behavioral Sciences	1	0
Database Marketing & Customer Strategy Management	1	0
Journal of Latex class files	1	0

Step 6: Data extraction

In this step, from 31 selected articles, 83 variables affecting CLV in the service sector were identified.

Step 7: Data Synthesize

These 83 identified variables affecting CLV were classified into 5 categories of customer variables, financial variables, product variables, selling variables and demographic variables.

Table 3.

The framework of variables affecting CLV in the service sector

Category	Variables	Authors
1. Customer variables	Customer attraction	Rust et al., 2004
	Customer Engagement	Manosuthi et al., 2021
	Customer retention probability	Mosaddegh et al., 2021
	Probability of customer being active	Gupta et al., 2006
	Probability customer i' activity in period t or the expected life of customer i.	Kristiani et al., 2014
	Expected service period of customer i	Hwang et al., 2004
	Customer loyalty	Qi et al., 2021; Wu & Li, 2011; Donkers et al., 2007; Segarra-Moliner & Moliner-Tena, 2016
	Customer retention	Rust et al., 2004
	Length of customer relationship	Ekinci et al., 2014; Estrella-Ramón, 2017
	Longevity	Çavdar & Ferhatosmanoğlub, 2018
	Relationship Duration	Qi et al., 2021
	Relationship age	Donkers et al., 2007
	Service period index of customer i	Hwang et al., 2004
	Commitment	Danis et al., 2021
	Satisfaction	Danis et al., 2021
2. Financial variables	The average of customers' monetary value	Rezaeinia et al., 2012; Sohrabi & khanlari, 2007; Mosaddegh et al., 2021; Çavdar & Ferhatosmanoğlub, 2018; Yan et al., 2018; Kristiani et al., 2014; Moro et al., 2015
	Customer revenue	Qi et al., 2021; Lee et al., 2018
	Monetary successes average	Moro et al., 2015
	Potential benefit from customer i at period ti	Hwang et al., 2004
	Acquisition cost	Mosaddegh et al., 2021; Kristiani et al., 2014; Safari Kahreh et al., 2014
	The amount of customers' recency	Rezaeinia et al., 2012; Sohrabi & khanlari, 2007; Yan et al., 2018; Kristiani et al., 2014; Moro et al., 2015; Benoit & den Poel, 2009
	Purchase Recency	Estrella-Ramón, 2017
	Recency (Number of days since last transaction)	Çavdar & Ferhatosmanoğlub, 2018
	Last transaction date	Mosaddegh et al., 2021
	Date of customer's last shopping	Nikkhahan et al., 2011
	Time gap between the first and last accounts openings	Mosaddegh et al., 2021
	Cancellation Recency	Estrella-Ramón, 2017
	Cancellation in last year	Donkers et al., 2007
	Purchase rate	Donkers et al., 2007
	Purchase in last year	Donkers et al., 2007

	The number of customers' transactions (frequency)	Rezaeinia et al., 2012; Sohrabi & khanlari, 2007; Çavdar & Ferhatosmanoğlub, 2018; Yan et al., 2018; Kristiani et al., 2014; Moro et al., 2015; Nikkhahan et al., 2011; Benoit & den Poel, 2009
	Number of the products that each customer has bought	Nikkhahan et al., 2011
	Total quantity of purchases	Estrella-Ramón, 2017
	Usage quantity	Wu & Li, 2011
	Average paid interest	Mosaddegh et al., 2021
	Interest rate	Hwang et al., 2004; Lee et al., 2018
	Churn probability	Mosaddegh et al., 2021; Nikkhahan et al., 2011
	Churning rate	Wang et al., 2008; Safari Kahreh et al., 2014
	Operational cost per customer	Mosaddegh et al., 2021
	Operating cost per time unit	Lee et al., 2018
	Retention cost	Safari Kahreh et al, 2014; Ho et al., 2006
	Retention rate	Li & Chang, 2010; Segarra-Moliner & Moliner-Tena, 2016; Wang et al., 2008; Lee et al., 2018
	Contribution margin (monetary value)	Estrella-Ramón, 2017; Li & Chang, 2010; Kristiani et al., 2014
	Marginal profit by unit of product j usage	Wang et al., 2008
	Present value of the customer Gross margin	Méndez-Su´arez & Crespo-Tejero, 2021
	Present value of the retention expense of the customer	Méndez-Su´arez & Crespo-Tejero, 2021
	Past profit contribution of customer i at period ti	Hwang et al., 2004
	Future profit contribution of customer i at period ti	Hwang et al., 2004
	Discount rate	Estrella-Ramón, 2017; Segarra-Moliner & Moliner-Tena, 2016; Kristiani et al., 2014; Wang et al., 2008; Safari Kahreh et al., 2014
	Marketing cost	Kristiani et al., 2014
	Expenditures on marketing campaigns	Mosaddegh et al., 2021
	Growth rate	Wang et al., 2008
	Average Transaction Size	Çavdar & Ferhatosmanoğlub, 2018
	Average transaction amount	Mosaddegh et al., 2021
	Number of cash payments and withdrawals	Mosaddegh et al., 2021
	Total number of credit transactions	Mosaddegh et al., 2021
	Operational risk	Ekinci et al., 2014
	Indexed profit	Donkers et al., 2007
	Payment of Claims	Yan et al., 2018
	Customer satisfaction expenditures	Mosaddegh et al., 2021; Qi et al., 2021; Ho et al (2006)
	One-period lagged variable of contribution margin	Estrella-Ramón, 2017

3. Product variables	Product usage	Estrella-Ramón, 2017
	Product ownership	Estrella-Ramón, 2017
	Intensity of product ownership	Estrella-Ramón, 2017
	One-period lagged variables of product usage	Estrella-Ramón, 2017
	The slope of product usage	Wang et al., 2008
	Brand credibility	Danis et al., 2021
	Brand equity	Hyun, 2009
	Product or transaction information	Kim et al., 2006
	Possibility of purchasing each product type by the customer	Nikkhahan et al., 2011
4. Selling variables	Cross-sell trends of the customer	Mosaddegh et al., 2021; Kim et al., 2006
	Up-sell trends of the customer	Mosaddegh et al., 2021; Kim et al., 2006
	Dynamic cross-buying	Estrella-Ramón, 2017
	Cross-selling probability	Nikkhahan et al., 2011
	Word of mouth	Wu & Li, 2011; Lee et al., 2006; Hosseini & Roslin, 2016
	Purchase intentions	Wu & Li, 2011
5. Demographic variables	Income	Estrella-Ramón, 2017; Hasheminejad & Khorrami, 2020
	Margin (the income the customer obtains multiplied by 12 months)	Segarra-Moliner & Moliner-Tena, 2016
	Age	Çavdar & Ferhatosmanoğlub, 2018; Estrella-Ramón, 2017; Hasheminejad & Khorrami, 2020
	Education	Hasheminejad & Khorrami, 2020
	Occupation	Hasheminejad & Khorrami, 2020; Hwang et al., 2004
	Gender	Hasheminejad & Khorrami, 2020; Estrella-Ramón, 2017; Hwang et al., 2004
	Social Class Score	Benoit & den Poel, 2009

Reporting phase

The reporting phase has one step that is communicating the results, which we presented it in the research finding section of this paper.

Findings

As seen in the above table, 5 categories of variables affect CLV in the service sector. The variables of customer attraction, customer engagement, customer retention probability, Probability of customer being active and customer loyalty are included in the category of customer related variables. Also in this category are the variables related to the lifetime of the customer relationship. In addition, commitment and satisfaction are included in this category. The second category are financial variables and are related to the calculation of monetary value. In the category of product variable, there are variables related to product usage, product ownership, and also variables related to brand, including brand credibility and brand equity. Cross selling and up selling are in the category of selling variables. Also, word-of-mouth and purchase intention variables are included in this category. Variables such as age, income, job, education, gender, and social class of the customer are included in the group of demographic variables. In this paper, variables have been extracted from articles in the field of banking, insurance, airline, telemarketing, telecommunication, hotel, restaurant, internet service, online game, online store services.

Figure 5.

The Number of articles used from each service industry

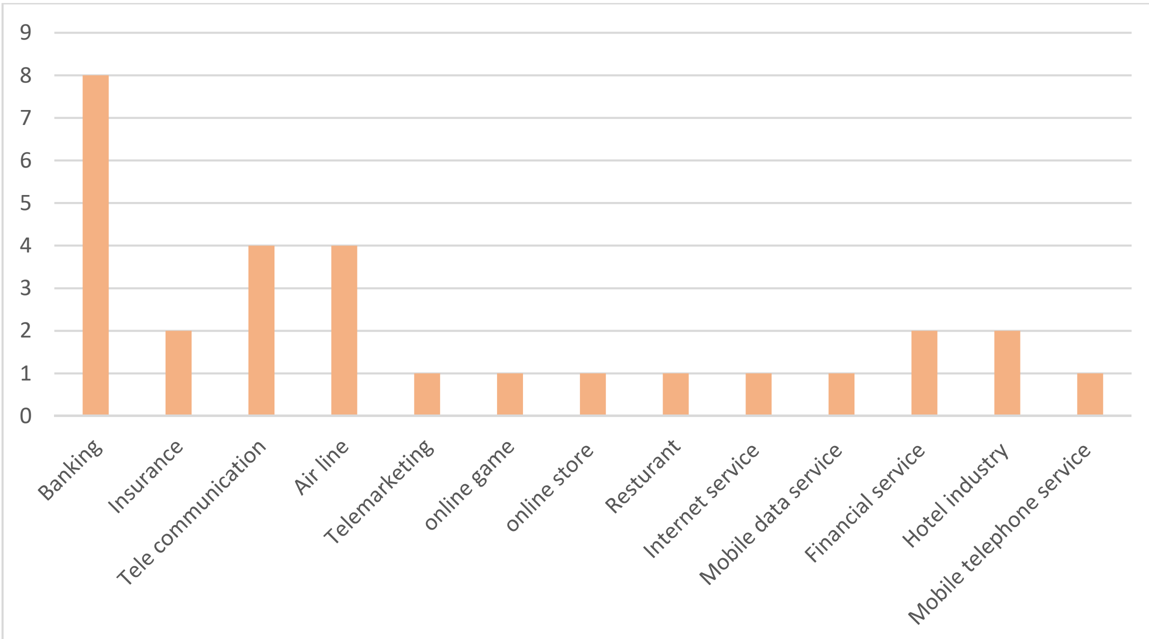
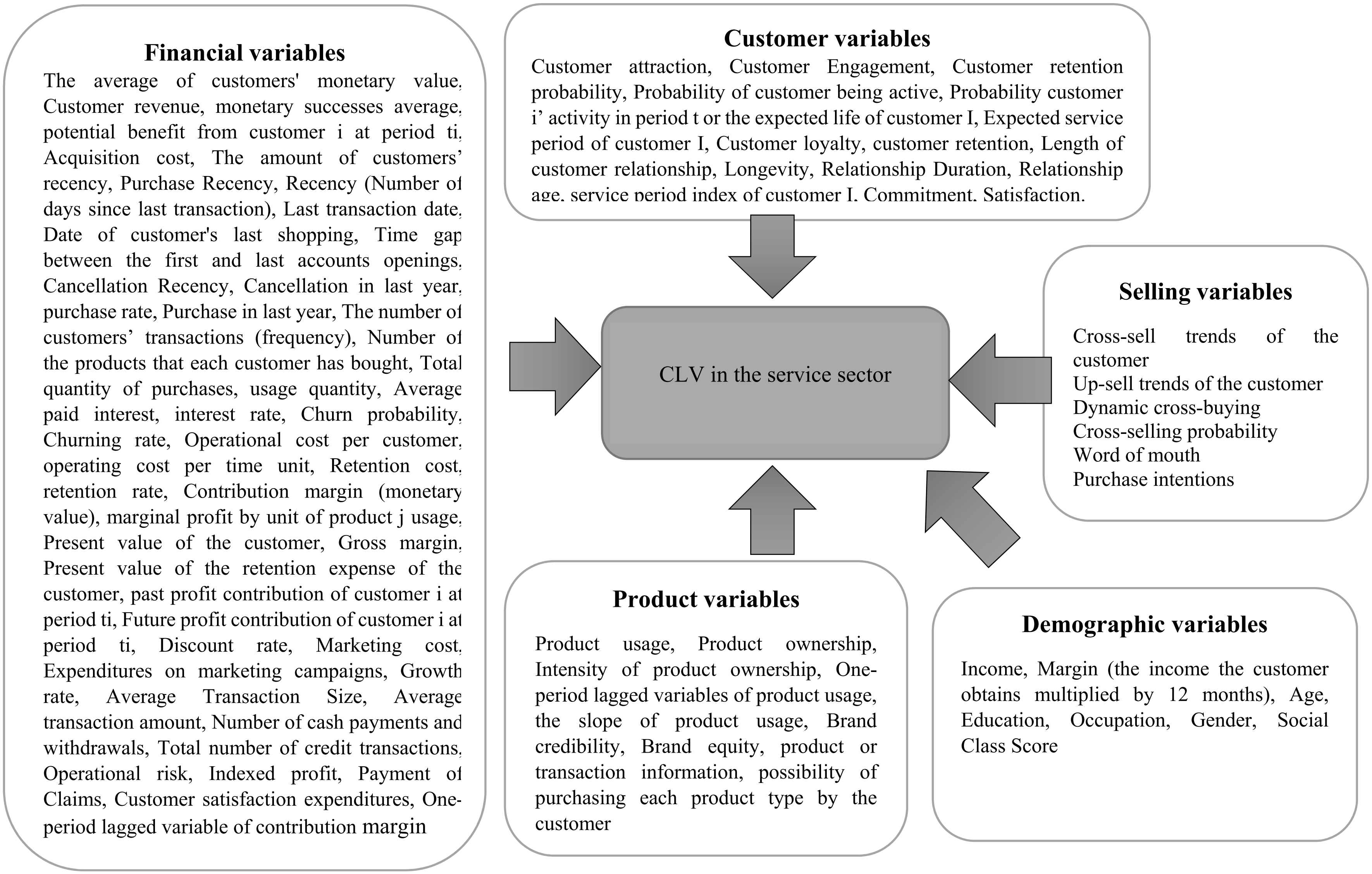


Figure 6.

A Framework of CLV in service sector



Discussion

CLV plays a considerable role in determining the customer's profitability value within the firms. The customer lifetime value can be used as a criterion for valuing customers, it is a suitable standard to rate customers, which makes the organization focus its efforts to identify, attract and retain customers with greater profitability. As we discussed earlier this research is the first study that has systematically reviewed the variables affecting customer lifetime value only in the service sector. Based on the results, five categories of variables have an effect on CLV in the service sector, which include customer variables, financial variables, product variables, selling variables, and demographic variables.

This study is an attempt to provide theoretical contributions to the customer lifetime value analysis literature. In fact, this framework will help future researchers to have a comprehensive view of the variables affecting CLV in the service sector and also help companies that operate in the service sector and need to analyze and understand their customers to know what variables to consider important. In addition, results obtained from this research could be helped not only preserve invaluable customers rather attract new ones to the services sector.

Like other conducted researches, the analyzes and results of this research are accompanied by limitations that we will discuss about them: despite all the efforts that were taken to make the statistical population of this research include all related studies, but due to Firstly, the scientific databases only include registered studies, and secondly, due to the limited access to some articles and also the non-English language of some articles registered in the scientific databases, unfortunately, the findings in the studies are not registered, or are inaccessible and non-English. Language is not included in this study.

Our study is focused on variables affecting CLV in the service sector. The generalization of this pattern to other different industries requires more investigation and more case studies according to specific business sectors in different industries and environments. Future researchers can enrich the variables of this framework, which will probably achieve new categories and patterns. Next researchers can identify and categorize variables affecting CLV in two forms: objective variables (financial indicators such as interest rate, discount rate, retention cost, ...) and subjective variables (such as customer satisfaction, etc.). On the other hand, the new technology of data analysis in the era of big data has created the possibility for researchers to identify new variables affecting CLV. Finally, In the future, we expect that this study will spur further extensions of developing the more general LTV models considering the characteristics of the industry and customers. In fact, this framework adapted to the services industries, we hope that future researchers will measure the compatibility of this framework with different industries and provide general advice.

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Conflict of Interests
No, there are no conflicting interests.