



Identifying and Prioritizing Dimensions and Indicators of Customer Lifetime Value for Supplemental Health Insurance Industry

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Abstract

Objectives: This study aimed to identify and prioritize the dimensions and indicators of measuring customer lifetime value (CLV) for the supplemental health insurance industry.

Methods: In this exploratory qualitative study, first, the initial dimensions and indicators of CLV were extracted through a scoping review. Next, 20 key informants, including academics and insurance industry experts, were selected by purposive sampling and then interviewed to identify and extract other dimensions and indicators of CLV for the supplemental health insurance industry. The data were collected using an in-depth and semi-structured interview and analyzed using the fuzzy analytic hierarchy process (AHP).

Results: Out of 232 retrieved articles, 13 studies were eligible to include in this scoping review. After reviewing this study, seven general factors, including customer profitability, service cost, customer retention rate, revenue, discount rate, and time and price paid by the customer, were identified as effective factors in CLV. Moreover, 61 comments were identified after interviewing experts (at the first stage of the interview). Then, after three stages of semi-structured interviews, 17 comments were removed, and 44 comments were approved. Finally, three dimensions, including profitability, customer loyalty, and value co-creation, and 13 indicators, including customer satisfaction, trust, repurchase intention, customer trust, brand performance to repurchase, financial purchasing pattern, service delivery pattern, information search, information sharing, co-production, feedback, helping, and tolerance, were extracted. After conducting the fuzzy AHP, profitability (0.652), customer loyalty (0.226), and customer value co-creation (0.122) were the most important dimensions for CLV, respectively. Additionally, purchase pattern (0.274), financial procedures (0.261), and service delivery pattern (0.117) had the highest priority among the indicators, respectively.

Conclusions: According to the results, although customer profitability was the most important dimension to measure CLV, CLV is a combinatorial concept. Therefore, the dimensions of customer loyalty and customer value co-creation should be taken into consideration as effective dimensions in predicting and measuring the concept.

Keywords: Customer Lifetime Value, Customer Profitability, Customer Value Co-creation, Customer Loyalty, Supplementary Health Insurance

1. Background

The origin concept of value is used when companies would like to utilize different technologies to analyze the customer buying behavior and maximize the value of the transaction with the customer (1). This criterion has been widely accepted in the marketing literature (2). In any sustainable business, companies, at first, create value by offering suggestions to the customer and then gain value from the customer (by making a profit) (3).

Issues related to the insurance industry in the complementary health sector are related to poverty due to imposing medical costs, expectations related to the health sector, and the growing number of customers in the insurance in-

dustry (4). Insurance companies are constantly faced with the challenge of whether the resources spent on customers are tailored to the amount of profit they make (5). Every year, insurers lose 15% of their customers, which by reducing this figure by 5%, the average growth of companies can be increased by more than 50% (6).

Insurance companies are considered active and profitable institutions in numerous countries worldwide (7). However, despite significant changes in the last two decades, the Iranian insurance industry is still facing a low penetration rate (8). Therefore, customer retention is one of the most important functions of marketing management. Management researchers have considered this for two important reasons; firstly, the cost of attracting new

customers in unstable market environments is very high; secondly, customers have gained more profit as they continue to do business with companies (9).

For the creation of competitive advantage, organizations need to examine the behavioral characteristics of their customers (10). Improving customer relationships and business performance requires formulating analytical programs, such as the estimation of customer value over the life of the customer (11). The mechanism of this concept is to promote the management knowledge of companies in competitive environments (1), which is obtained by measuring all future profits obtained from the customer and the losses incurred by the company during the customer's purchase life (12). There are several known models in this field as follows: (1) the recency, frequency, monetary value models in which the financial attitude is not so important and relies more on the customer's previous purchases to predict the customer's behaviors in the future (13); (2) SOW model in which the most emphasis is on the customer's share of purchases from a company; (3) PCV model in which the most emphasis is on the performance and profitability of the customer in the past; (4) ROI model in which the amount of return on investment is considered the main factor in calculating customer value and understanding what value is crucial (14).

The calculation of customer retention rates allows companies to evaluate the value of the transaction with the customer, provides the information needed to make decisions about customer retention, and helps better manage the customer portfolio (15).

2. Objectives

This study aimed to identify the dimensions and indicators of the lifetime value of supplementary health insurance customers to prioritize these concepts and the correct understanding of the concept of customer lifetime value (CLV) to establish a win-win relationship between insurance companies and the insured.

3. Methods

This exploratory qualitative study was carried out on 20 faculty members of Ahvaz Jundishapur University, Khuzestan, Iran, and the insurance industries using the purposive sampling method. The data were collected using the scoping review approach and in-depth and semi-structured interviews. The data were classified using the data-driven method and the fuzzy analytic hierarchy process (AHP) and analyzed using Excel software (version 2010) (Figure 1). For the identification and prioritization of

the dimensions and indicators of CLV (Figure 2), the following steps were taken:

3.1. Identification of Dimensions and Indicators of CLV

For the determination of initial indicators and factors affecting CLV, this study first identified the main research question (i.e., what factors are related to the CLV of supplementary health insurance clients?). Then, after developing the search strategy, keywords related to customer longevity value, customer profitability, customer value loyalty, and customer value co-creation were combined. The literature search was performed in several electronic databases, namely IranDoc, Civilica, Google Web, SID, Scholar Scopus, Emerald, and Elsevier, within 2019 to 2020.

The studies published within 2015 - 2020 were reviewed. Considering the novelty of the research and the lack of correlation of all dimensions with the concept of CLV in previous studies in this field, the search strategy in this study was selected. Firstly, the concept of CLV was examined to identify the relevant literature of the CLV concept and the existing gaps in this area. Secondly, the literature associated with factors affecting the CLV concept was searched. Then, the articles that met the inclusion criteria were evaluated. The inclusion criteria were analytical and descriptive studies and articles that included the aforementioned keywords. Finally, after reviewing the full text of the articles, the required data were extracted. An unstructured interview was employed to complete the results of the study. Next, for interviewing the experts, an interview guide was designed based on the framework extracted from the review study and unstructured interviews. Finally, experts' opinions were extracted through data coding (using the data-driven technique), and the results were given to the experts to measure CLV.

3.2. Prioritization of Dimensions and Indicators of CLV (Fuzzy AHP)

In this step, after identifying and confirming dimensions and indicators by the experts, the fuzzy AHP was used to prioritize dimensions. Accordingly, the pairwise comparison matrices of the criteria were formulated and given to the experts. After answering the pairwise comparisons matrices, the rate of incompatibility of the tables was calculated. Then, using the geometric mean formula, the answers were combined and integrated into pairwise comparisons matrices. The weight of pairwise comparisons matrices were also calculated using the geometric mean formula.

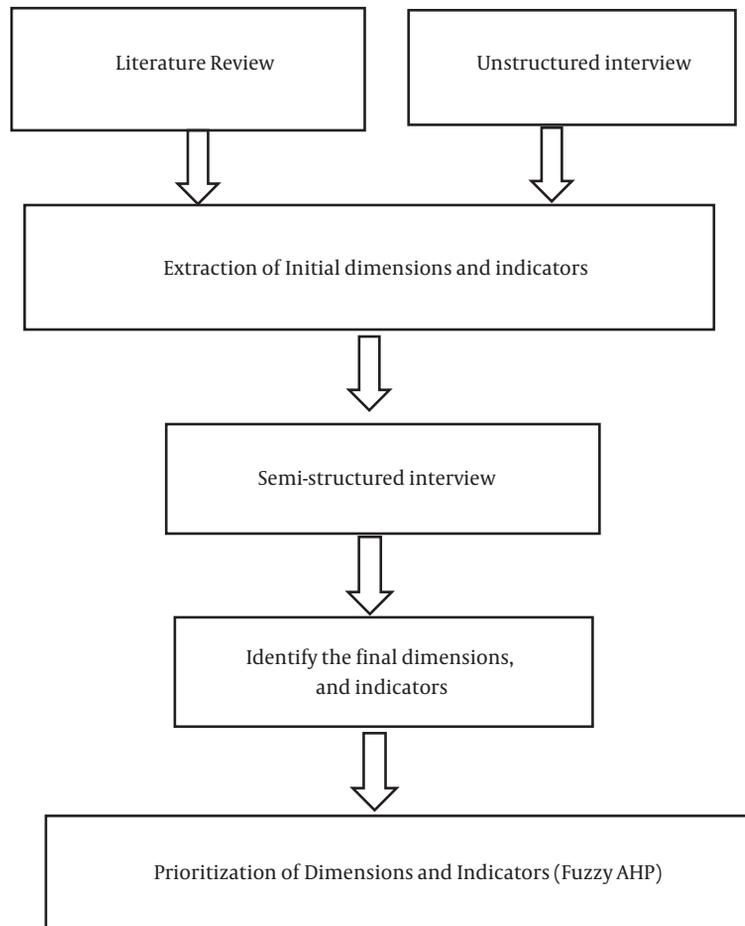


Figure 1. Process of designing and explaining the indicators of customer lifetime value

4. Results

4.1. Demographic Profile (Expert Panel Members)

In the present study, 18 male and 3 female subjects were included (Table 1).

4.2. Results of Extracted Dimensions and Indicators of CLV

A total of 280 articles were identified through electronic databases, of which 250 articles were excluded, and 30 were grey literature (e.g., books and dissertations). After removing 48 duplicates, 232 articles were remained to examine the indicators and dimensions of the model (Figure 2). After reviewing the concepts, seven categories related to the CLV concept, including customer profitability, service cost, customer retention rate, revenue, discount rate, and time and price paid by the customer, were identified (Table 2). Furthermore, the factors affecting CLV were extracted in the form of three dimensions, including profitability (4

Table 1. Demographic Results

Variables	Frequency	Percentage
Educational status		
Bachelor's degree	7	35
Master's degree	8	40
PhD	5	25
Age (y)		
30 - 40	5	25
40 - 50	13	65
Over 50	2	10
Gender		
Male	18	90
Female	2	10
Total	20	100

indicators), customer loyalty (8 indicators), and customer value co-creation (20 indicators) (Table 3).

After analyzing the interviews with experts, out of 61 comments coded in this study, 17 codes were removed (due

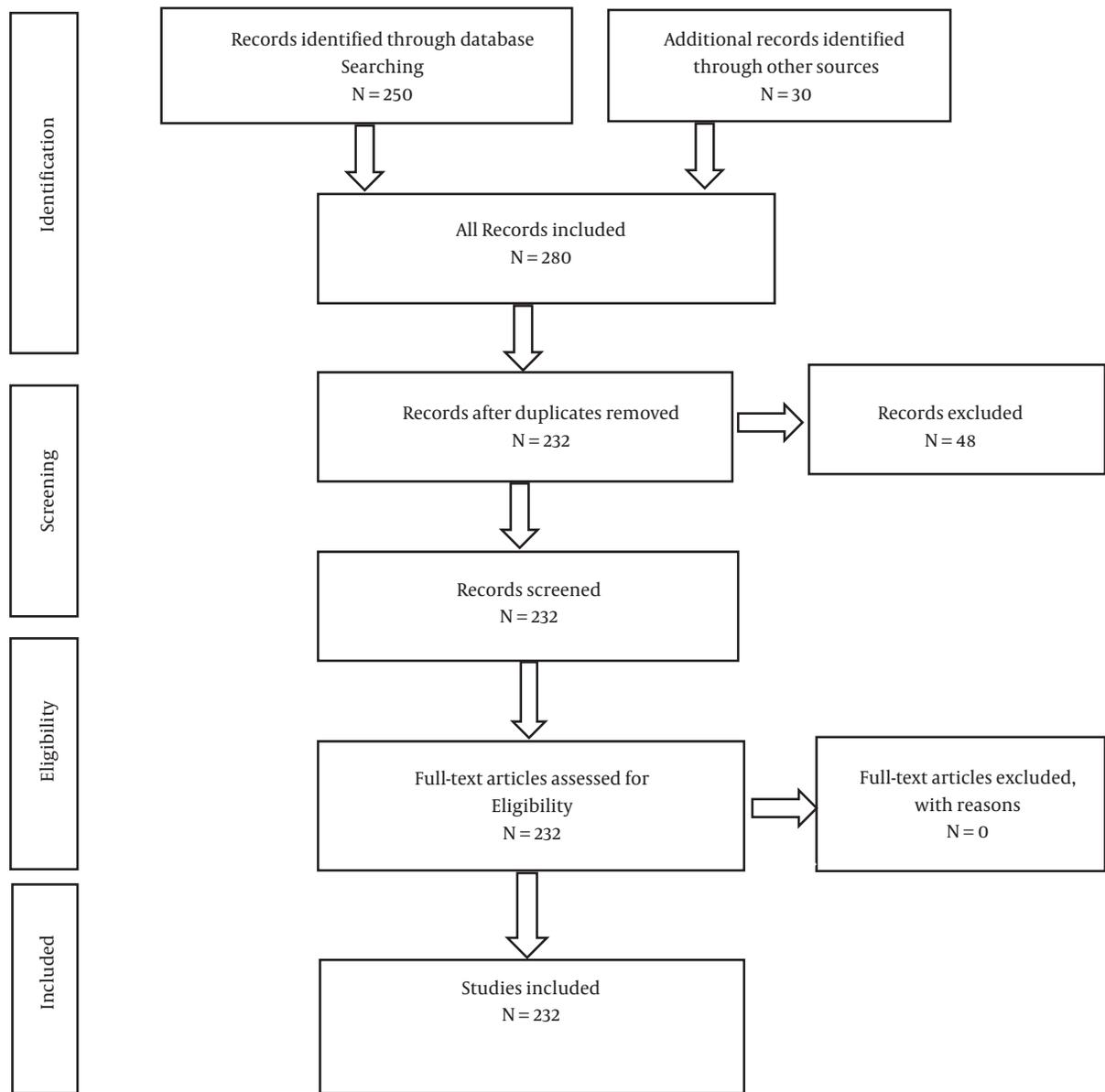


Figure 2. Diagram of the scoping review process

to low frequency), and 44 codes remained. Additionally, three dimensions with 13 indicators were identified in the literature review stage, including customer loyalty (5 indicators and 21 items), customer profitability (3 indicators and 10 items), and customer value co-creation (6 indicators and 13 items) (Table 4).

3.3. Results of Fuzzy AHP Analysis

The rate of incompatibility of the tables was estimated at less than 0.1, indicating the stability and reliability of

pairwise comparisons. The indicators were ranked, respectively, as follows: (1) purchasing pattern (weight: 0.274); (2) financial procedure (weight: 0.261); (3) service delivery pattern (weight: 0.117); (4) customer satisfaction (weight: 0.061); (5) purchase intention (weight: 0.05); (6) brand preference (weight: 0.044); (7) customer trust (weight: 0.035); (8) recommendation to others (weight: 0.33); (9) helping (weight: 0.033); (10) co-production (weight: 0.032); (11) information sharing (weight: 0.023); (12) tolerance (weight: 0.019); (13) feedback (weight: 0.015); and (14)

Table 2. Indicators of Customer Lifetime Value

Authors	Price	Time	Discount	Income	Retention Rate	Cost of Providing Services	Customer Profitability
	Paid by the Customer	Purchase Horizon and Last Purchase Time	Discount Rate	Round Financial Income and Repeat Purchases	Average Absorption Cost, Absorption Rate, Probability of Customer Retention, and Probability of Leaving the Customer	Advertising, Attraction Cost, Customer Attraction Rate, Marketing Cost for Additional Sales, and Total Production Cost	Annual Profit, Profit Margin, Average Fixed Profit, Last Year Profit, Potential Profit, Profitability, and Purchase Financial Value
McNeil and Carpenter (1995) (16)			*	*	*	*	*
Blatterbag and Dayton (1996) (17)			*		*	*	*
Gupta and Lehmann (2003) (18)			*		*		*
Reinartz and Kumar (2003) (19)	*	*	*	*		*	
Burger and Nasr (1998) (20)						*	
Blatterbag et al. (2001) (21)		*			*	*	
Blatterbag et al. (2008) (22)			*		*		*
Kumar et al. (2007) (23)		*	*	*			*
Hwang et al. (2004) (24)					*		*
Blatterbag et al. (2008) (25)			*				*
Heitz et al. (2011) (26)			*	*			*
Jain and Singh (2002) (27)			*	*		*	
Busacca and Bertoli (2009) (28)		*		*		*	

Table 3. Factors Affecting Customer Lifetime Value

Row	Dimensions	Proposed Indicators
1	Customer profitability	Service delivery pattern; Purchasing pattern; Financial procedures; Cross-selling
2	Customer loyalty	Intention to repurchase; Brand preference; Customer trust; Word of mouth; Satisfaction; Product quality; Commitment; Trust
3	Customer value co-creation	Information search; Co-production; Feedback; Helping; Information sharing; Tolerance; Communication; Defense; Advocacy; Responsible behavior; Personal interaction; Awareness; Brain activity; Co-learning; Risk assessment; Accessibility; Transparency; Co-production use; Citizen behavior; Conversation

information search (weight: 0.014) (Table 5)

5. Discussion

Given the characteristics of each industry, the basis for assessing CLV is different (29). This study aimed to identify and prioritize the dimensions and indicators of mea-

suring CLV in the supplemental health insurance industry using a multidimensional approach to accurately predict CLV and create appropriate value for policyholders and insurance companies. In this study, CLV was examined using the data-driven method and by identifying 13 indicators in three dimensions (e.g., customer profitability, customer loyalty, and customer value co-creation). This study

Table 4. Results of Foundation Data Analysis

Axial Coding	Concepts in Open Coding	Frequency
Customer loyalty		
Customer satisfaction	Appropriateness of the per capita membership fee rate in the supplementary health insurance contract	17
	Order in conducting insurance affairs	16
	Appropriate information on how to provide complementary health insurance services	15
	Reasonability of documents required to pay for medical expenses	14
	Providing online services and medical centers of the contracting party	13
	Lack of time to pay for medical expenses	14
	Timely processing of complaints of the insured	16
	High ceilings and coverage of obligations	13
	Polite behavior of company employees	12
	No waiting period in providing services	9
	Single membership rate for all age groups	17
	Consistency in the quality of service delivery	13
	Repurchase intent	20
Providing positive experiences and benefits of insurance company services with friends and colleagues		12
	Encouraging others to buy insurance policies from the insurance company	14
Customer trust		
Customer trust	Privacy (content of medical records)	10
	Feeling of security	16
	Treating the customer honestly	12
Brand performance		
Brand performance	Trained, skilled, and experienced staff	13
	Well-known and reputable brand of the insurance company	13
Intent to repurchase		
Intent to repurchase	The first choice to receive supplementary health insurance services	13
	Intention to buy insurance policy in the future from the insurance company	13
		13
Customer profitability		
Financial procedures		
Financial procedures	Cash purchase instead of installment purchase	17
	Low customer purchase discounts	16
		16
Purchasing pattern		
Purchasing pattern	Lots of money to buy from this insurance company	17
	Frequency of purchases from this insurance company	16
	Predictability of purchase	15
	Cost of advertising the services of the insurance company	13
	Purchase of other insurance policies by the customer from the insurance company	16
Service delivery pattern		
Service delivery pattern	Requesting fast delivery of services from the insurance company	12
	Low training costs and benefits of insurance services	13
	Low loss ratio of insurance policies purchased from the insurance company	16
Customer value co-creation		
Information search		
Information search	Looking for information about complementary health insurance services	12
	Easy access to information	10
Information sharing		
Information sharing	Providing the required information and documents for the insurance company	12
	Providing helpful ideas on how to improve services	13
Co-production		
Co-production	Participating in the design of commitments and how to provide complementary health insurance services	13
	Participating in problem-solving	12
Feedback		
Feedback	Providing problem and constructive criticism of the insurance company	14
	A good and honest relationship with the insurance company	13
Helping		
Helping	Helping other customers	14
	Advising other customers	13
Tolerance		
Tolerance	Being patient to receive medical expenses	16
	Tolerance in case of mistakes in providing services	13

Table 5. Results of Fuzzy Analytic Hierarchy Process Analysis

Criterion/Index	Relative Weight	Final Weight	Rank
Customer loyalty			
Customer satisfaction	0.269	0.061	4
Brand performance	0.196	0.044	6
Word of mouth	0.147	0.033	8
Intent to repurchase	0.233	0.053	5
Customer trust	0.155	0.035	7
Customer profitability			
Service delivery pattern	0.179	0.117	3
Financial procedures	0.401	0.261	2
Purchasing pattern	0.420	0.274	1
Customer value co-creation			
Co-production	0.267	0.032	9
Helping	0.267	0.033	8
Information sharing	0.192	0.023	10
Tolerance	0.152	0.019	11
Feedback	0.122	0.015	12
Information search	0.115	0.014	13

was examined at two levels due to multilateralism and lack of a purely financial view of the subject. Therefore, it is understandable why some relationships with the concept of CLV have not been considered in other studies.

Given the similarities and differences between the included studies, the obtained results were classified into two levels, namely dimension (i.e., the relationship with the concept of CLV) and indicator (i.e., the relationships of indicators with dimensions). In the current study, profitability in measuring CLV was the most important priority, which is consistent with the results of a study by Wang and Hong (2006) (30). However, there are differences in profitability calculations in the study of Wang and Hong (i.e., the calculations based on accounting criteria, such as income and expenses), which might be due to the concept of profitability. Therefore, it is suggested to take the indicators of financial procedures, purchasing patterns, and service delivery patterns into account to more accurately measure customer profitability in different industries and make more effective decisions about how to treat customers.

The financial practice indicator was identified as the second in the present study, which is in line with the results of a study by Dawson et al. (2017) (31). It is suggested to help managers and researchers adopt appropriate strategies using these indicators. The buying pattern indicator was the most important priority, which is in line with the results of studies by Leon et al. (2020) (32) and Vickers (2020) (33). In the present study, the indicator of customer loyalty was identified as the second important and effective dimension in measuring the value of customer longevity, which is consistent with the results of studies by Wu and Li (2018)

(34), Flint et al. (2010) (35), Meyer-Warden (2007) (36), and Chen et al. (2015) (37) who examined and confirmed the relationship between these two concepts. However, there are differences in the organization and application of indicators between studies, which is important due to the industry requirements examined in this study. Therefore, for the indication of the importance of the indicators of loyalty in the industry, researchers, and decision-makers of the insurance industry should apply the indicators studied in the present study in other insurance industry sectors using the existing capacities.

The importance of loyalty indicators in the insurance industry was confirmed in studies by Abror et al. (2019) (38) and Singh et al. (2017) (39). Loyalty indicators are among the most important factors in the insurance industry that experts should consider and prioritize. However, due to some differences in utilizing these indicators, it is recommended to prioritize each of these indicators.

The findings of the current study also showed a close association between customer value co-creation and CLV. Due to the nonuse of this dimension in studies in CLV, researchers need to examine and pay more attention to this dimension in other industries to measure CLV and improve customer relationship productivity. The obtained results of customer value co-creation in the present study are in line with the results of studies by Nadeem et al. (2020) (40), Assiouras et al. (2019) (41), Tommasetti et al. (2015) (42), and Yi and Gong (2013) (43), who have developed and reviewed some indicators of customer value in different industries. The disparity between studies can be attributed to the lack of specialized indicators in complementary health insurance and the use of scoping review methods,

interviews, AHP method, and structural equation methods to simultaneously analyze the concept. Therefore, it is suggested to use the aforementioned methods simultaneously to compile effective and efficient indicators in each industry sector. Furthermore, the model can be used to measure the value of customers' longevity to indicate the choice of the right path to the identification of the factors affecting the dimension.

This study has some limitations. Firstly, due to the complexity and frequency of variables and the lack of relevant studies in this area, the effect of moderator variables was not considered. Secondly, the interviews were not conducted face-to-face due to the coronavirus disease 2019 pandemic.

5.1. Conclusions

According to the results, although customer profitability was the most important dimension to measure CLV, CLV is a multidimensional concept. Therefore, the dimensions of customer loyalty and customer value co-creation should be taken into consideration as effective dimensions in predicting and measuring the concept. The results of this study can be helpful for other industries to identify and formulate the measurement dimensions of CLV. Additionally, conducting comparative studies in different industries and different countries and identifying the moderating variables in the current study can be helpful to make better use of the concept of CLV.

Footnotes

Authors' Contribution: Study concept and design, F. K., R. D., and H. Gh.; Analysis and interpretation of the data, R. D.; Drafting of the manuscript, R. D.; Critical revision of the manuscript for important intellectual content, R. D.; Statistical analysis, F. K., R. D., and H. Gh.

Conflict of Interests: The authors declare that there is no conflict of interest.

Data Reproducibility: The data presented in this study are openly available in one of the repositories or will be available on request from the corresponding author by this journal representative at any time during submission or after publication. Otherwise, all the consequences of possible withdrawal or future retraction will be with the corresponding author.

Ethical Approval: This study was approved by the Ethics Committee of Mobarake Isfahan University, Isfahan, Iran (reference no.: 19021254971004). The participants were assured that their responses would remain confidential and anonymous. The participants were also informed that participation in the research project was voluntary, and they

could withdraw from the study at any time without giving a reason.

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