Int. J. Nonlinear Anal. Appl. 12 (2021) No. 2, 991–1004
ISSN: 2008-6822 (electronic)
http://dx.doi.org/10.22075/IJNAA.2021.5169

Customer lifetime value analysis in the banking industry with an emphasis on brand equity

Bahram Seyedin[a], Mojtaba Ramazani[b*], Hossein Bodaghi Khaje Noubar[a], yaghob Alavimatin[a]

[a] *Department of Management , Tabriz Branch, Islamic Azad University, Tabriz, Iran.*
[b] *Department of Management, Bonab Branch, Islamic Azad University, Bonab, Iran.*

(Communicated by Dr. Ehsan Kozegar)

Abstract

Due to the competitiveness of the banking industry and the importance of profitability, access to customer information is essential for establishing effective relationships that serve the interests of both parties. Establishing long-term customer relationships and building brand equity are pivotal in modern banking, and thus improving relationship quality plays a key role in development of new services and customer lifetime value (CLV) measurement. The purpose of the present research is to provide a new model for CLV measurement in the banking industry with an emphasis on brand equity. This study is descriptive and a question naire is used to collect data. The population consists of all the customers of Refah Bank of Iran (with an average annual resources of at least 500m rials), of whom 382 are randomly selected as the sample. Data are analyzed using de-scriptive statistics in SPSS and partial least squares structural equation modeling (PLS-SEM) in SmartPLS. The results indicate the strong fit of the overall model (GOF = 0.782) and show the significant positive effect of brand equity on CLV.

Keywords: Customer Lifetime Value, Brand Equity, Relationship Quality, Perceived Value, Banking

1. Introduction

Many organizations have witnessed the erosion of customer loyalty with the rise of e-commerce and its resulting benefits to consumers, including increased choices, lower prices, and ease of brand

*Corresponding Author: Mojtaba Ramazani
Email addresses: sh_seyedin@yahoo.com (Bahram Seyedin[a]), m.ramazani@yahoo.com (Mojtaba Ramazani[b*]), h_budaghi@yahoo.com (Hossein Bodaghi Khaje Noubar[a]), Alavimatin@iaut.ac.ir (yaghob Alavimatin[a])

Received: April 2021 *Revised:* May 2021

switching (Chiang & Chin-Sheng, 2018). Today, customers are the heart of business in any industry, and organizations need to effectively manage their interactions with customers in order to continue operating in a highly competitive environment. Customer relationship management (CRM) provides a 360-degree view of customers and their preferences and need, allowing organ-izations to manage customer relationships, increase their profitability, and calculate customer life-time value (CLV) (Sohrabi et al., 2018).

Recent studies in various economic sectors provide evidence of the precursors of brand equity and relationship quality and their effect on customer behavioral intentions and CLV (Segarra-Moliner & Moliner-Tena, 2016). Increasing advancement in communications technology has revo-lutionized different aspects of human life and organizational performance. With the transition from traditional economy and the ever-increasing competition, customers have become the cen-terpiece of all organizational activities, and from a competitive perspective, the survival and sus-tainability of organizations depend on identifying, attracting, and retaining customers (Ekinci et al., 2014). It is becoming increasingly important to use data analytics to increase marketing effec-tiveness, forecast consumer needs, and increase the lifetime value of customers, and segmentation is a critical tool for understanding how consumers differ in terms of their interactions and behav-ioral responses (Chiang & Chin-Sheng, 2018, 2017).

This move towards a customer-centric approach has led to an interest in estimating and understanding CLV, which is defined as the present value of the future cash flows or the value of business attributed to the customer during their entire relationship with the company. Measuring the CLV of individual customers can help improve customer segmentation and marketing re-source allocation, thus leading to higher customer retention and profits for the firm (Benoit & Van Den Poel, 2009).

Analysis of brand equity in the banking industry through perceived value and relationship quality is critical for management of customer profitability. Recent studies in several countries have provided evidence of the precursors of customer equity (value, brand, and relationship equity) and their influence on behavior intentions and CLV (Segarra-Moliner & Moliner-Tena, 2016). Given the intangible nature of services and given that satisfied customers become brand advocates, companies are encouraged to create positive relationships with their customers.

2. Theoretical Framework and Literature Review

CLV is a core metric in customer relationship management that can be used to improve market segmentation and resource allocation, evaluate competitors, customize marketing communication, optimize the timing of product offerings, and determine a firms market value (Dahana et al., 2019). Customers wish to receive value in return for the profits they bring to an organization. As markets become more and more competitive, customers often have several alternatives when pur-chasing the goods and services they need. Therefore, they consider qualitative characteristics in addition to physical characteristics when deciding to purchase a product. Customers seek clues to help them with their choice. Given that conventional methods of customer segmentation and CLV modeling cannot respond to changes in a dynamic environment, more accurate and practical segmentation methods are necessary that account for CLV and enable firms to develop plans to enhance their customer value and profitability (Safari-Kahreh et al., 2014).

Today, companies are increasingly focusing on establishing and maintaining good customer relations during each customers lifetime with the company and subsequently generating higher profitability and growth. CLV is one of the tools for identifying the value or profitability of custom-ers (Ekinci, 2014). The key challenge of CLV measurement is the development of a model to forecast the future flow of profits that each customer will provide to the company (Romero et al., 2013).

The present research aims to examine the mediating role of brand equity in the association between relationship quality and CLV in the banking industry. Given that developing customer relationships is the key value creation activity in todays business strategy (Chan et al., 2010), devel-oping a customer value model can contribute to remaining competitive in this industry. The signif-icance of the present research is in its applicability in the banking industry and the measurement of customer profitability and CLV with industry-specific indicators.

2.1. Relationship Quality and Perceived Value

Relationship quality is considered a meta-construct that consists of several components and represents the general nature of relationships between an organization and its customers. It can be defined as a bundle of intangible value which augments products or services and results in an expected interchange between buyers and sellers (Wong & Sohal, 2002). Relationship quality is the customers perception of how the overall relationship meets their expectations, predictions, objectives, and wishes (Jarvelin & Lehtinen, 1996). Trust, commitment and satisfaction are the three dimensions underlying relationship quality (e.g., Athanasopoulou, 2009; De Wulf et al., 2001; Leonidou et al., 2006). Here, ease of use is introduced as another dimension of relationship quality in the banking industry.

From a customers perspective, perceived value refers to how the customer values the usefulness of a product or service considering the benefits received and the sacrifices made to obtain the product or service (Zeithaml, 1988). Recent studies have identified relationship quality and per-ceived value as antecedents of loyalty (Hennig-Thurau et al., 2002; Moliner, 2007, 2009; Sanchez et al., 2005). In the present research, the association between perceived value and relationship quality is tested based on the following hypotheses:

H1. Perceived value affects relationship quality.

H1.1. Perceived value affects the satisfaction dimension of relationship quality.

H1.2. Perceived value affects the trust dimension of relationship quality.

H1.3. Perceived value affects the ease of use dimension of relationship quality.

H1.4. Perceived value affects the commitment dimension of relationship quality.

2.2. Brand Equity and Customer Lifetime Value

Brand equity is the value derived from the perception of consumers of a particular brand. Brand equity is about customer perceptions of how well known a brand is (i.e., brand awareness) and what it represents (i.e., brand image) (Merz et al., 2018). Customers seek clues to help them with their choice. Scholars believe that word of mouth is especially important for the success of service providers. Service quality is generally experiential in nature and thus it is difficult to evaluate pri-or to purchase. When customers cannot easily evaluate the quality and value of services and/or the capabilities of service providers, they tend to consider the credibility and reputation of the com-pany, mostly promoted through word of mouth, as a key indicator of quality (Ghafari et al., 2013).

CLV of a customer is the value the customer brings to the firm over their lifetime. Recent studies show that past contributions form a customer may not always reflect their future worth to the firm. Hence, a metric is needed that will be an objective measure of future profitability of the cus-tomer to the firm (Reinartz & Kumar, 2003). The high complexity of CLV measurement methods and formulas make them inefficient in practice, highlighting the need for simplified and more pragmatic models (Safari-Kahreh et al., 2014). Therefore, the second hypothesis is developed as follows:

H2. Brand equity affects customer lifetime value.

H2.1. Relationship quality affects customer lifetime value.

H2.2. Relationship quality mediates the association between perceived value and brand equity.

H2.3. Brand equity mediates the association between perceived value and customer lifetime value.

H2.4. Brand equity mediates the association between relationship quality and customer lifetime value.

2.3. Literature Review

The positive association between relationship quality and customer equity has been documented in the marketing literature. The three equity framework has lately been used to explain consumer purchase intentions and long-term value across various industries (Dwivedi et al., 2012). Ambler et al. (2002) provide a theoretical discussion on the effect of customer-based brand equity on the customers mind-set that increases with relationship quality. Bolton and Drew (2004) argue that brand equity affects commitment (a key component of relationship quality). Similarly, Martenson (2007) states that brand equity depends on customers perceptions and can generate trust in the company (another key component of relationship quality). Similarly, Martenson (2007) states that brand equity depends on customers perceptions and can generate trust in the company (another key component of relationship quality). Therefore, a positive customer-based brand equity can have a favorable effect on consumer commitment and trust. In other words, with high brand equi-ty, customers tend to maintain their relationship with the company.

According to the customer value creation paradigm, generating and retaining competitive advantage must go beyond a simple focus on service quality or customer. Without a perception of a certain minimum value of the product or the service, there is no basis on which to form percep-tions about the brand and the relationship (Segarra-Moliner & Moliner-Tena, 2016).

There is no standard way of measuring CLV, and existing research has some limitations concerning the real-world application of the proposed methods. As Jain and Singh (2002) emphasize, robust, simple, flexible, and empirically valid models are still very scarce in the literature (Ekinci et al., 2014). Therefore, it is imperative to provide a model for measuring CLV based on brand equi-ty and perceived value by drawing from the strengths of the existing methods.

Jalalzadeh et al. (2018) developed a model for brand performance based on brand equity from a customers perspective in a case study of the Iranian banking system. They showed that all the dimensions of brand equity except brand differentiation and brand awareness affect relationship equity, and all the dimensions of relationship equity are positively associated with brand performance. In a similar vein, Tutian and Ansari (2016) investigated the effect of customer focus, corporate social responsibility (CSR), and perceived quality on customer satisfaction in a case study of the Pasargad Bank of Iran. The reported the significant positive effect of customer focus on CSR and perceived value of services. They also showed that perceived value has a significant positive effect on customer satisfaction.

Cermak (2015) conducted a portfolio analysis of customer profitability and customer lifetime val-ue in a case study and found that the risk profile of customers was above the average and that one-off customers were more reliable payers and more profitable for the company.

2.4. The Conceptual Model

The present research integrates the factors that affect customer retention and long-term customer relationships in the banking industry into a conceptual CLV model. These include perceived val-ue, relationship quality, services (on-site and off-site), and brand equity.

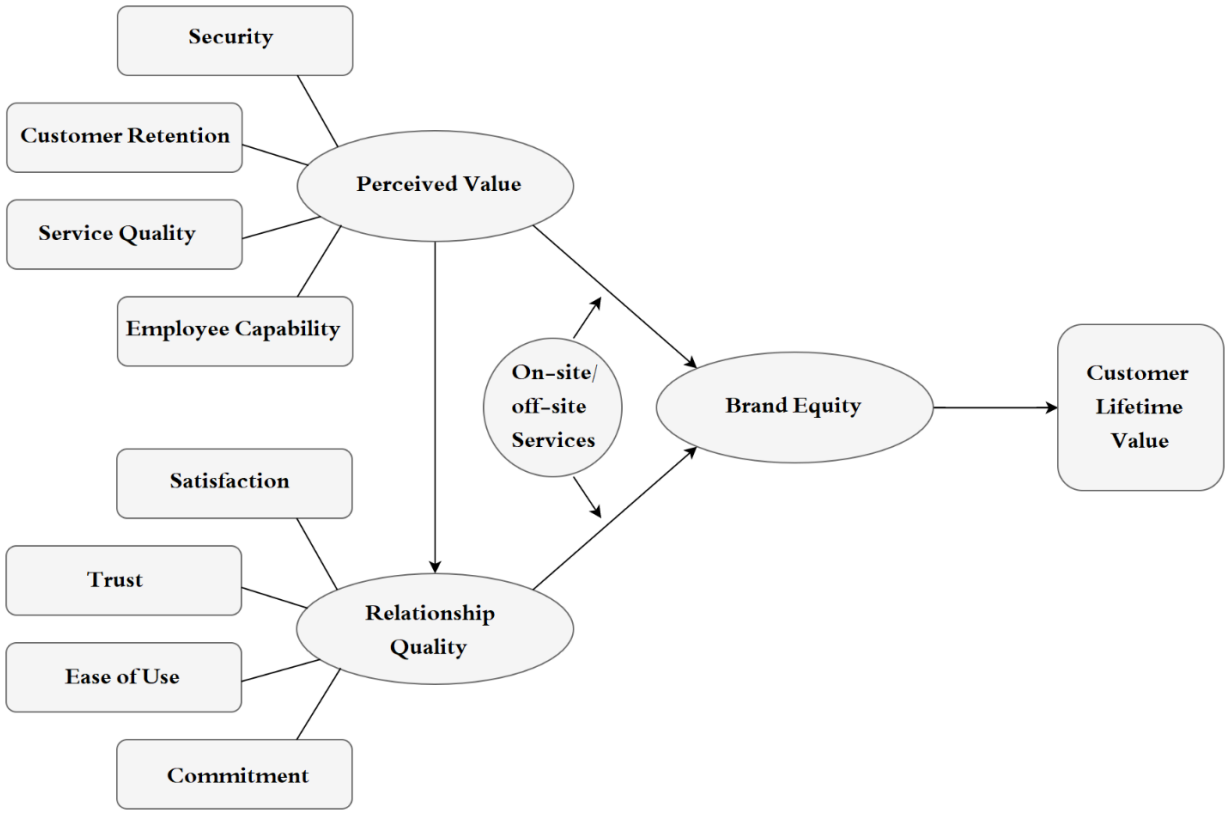

Figure 1: The conceptual model of the research.

3. Methodology

The population of this research consists of the customers of Refah Bank of Iran. Using stratified random sampling, 382 customers are selected as the sample. Data are collected using a question naire, with the items rated on a 5-point Likert scale (ranging from 1 completely disagree to 5 completely agree). The e related to perceived value, relationship quality, and CLV are adopted from Segarra-Moliner & Moliner-Tena (2016), Zhang et al. (2016), and Lhoest-Snoeck et al. (2014). The variables, dimensions, and items are provided in Table 1.

Table 1: Variables, dimensions, and items of the questionnaire

Variables	Dimensions	Items
Perceived value	Commitment	1-3
	Ease of use	4-6
	Trust	7-9
	Satisfaction	10-12
Relationship Quality	Security	13-15
	Service quality	16-19
	Customer retention	20-23
	Employee capability	24-27
Brand equity		28-30
Customer lifetime value		31-34

- **Customer lifetime value (CLV):** CLV is the present value of the future cash flows or the value of business attributed to the customer during their entire relationship with the company (Benoit & Van Den Poel, 2009). Different factors are used in the measurement of CLV, including perceived value, relationship quality, and diversity of services.

- **Perceived value:** Perceived value is the ratio of perceived benefits relative to perceived sacrifice. It is also defined as the customers overall assessment of the utility of a product based on the perception of what is received and what is given (Floh et al., 2014). A cus-tomers perceptions may change depending on the circumstances (Prior, 2013).

- **Relationship quality:** Relationship quality is defined as a bundle of intangible values resulting in an expected long-term relationship between related parties. It is also described as the degree of appropriateness of a relationship to fulfill the needs of the customer asso-ciated with the relationship (Rajaobelina & Bergeron, 2011). Relationship quality is seen as the customers positive feelings towards the service provider, their relationship with the provider in terms of trust and commitment, and their overall satisfaction with the provider (Ng et al., 2011).

- **Brand equity:** Customer-based brand equity is defined as the customers subjective and intangible assessment of the brand. It is the different effect that customer knowledge about a brand has on their response to marketing activities and programs for that brand (Keller and Lehmann, 2006). The importance of customer-based brand equity has been emphasized in that brand creates specific associations in consumers minds and indicates a general market signal about the credibility of a particular brand (Segarra-Moliner & Molin-er-Tena, 2016).

- **Multichannel banking:** Like any other business, banks continuously try to maximize their profits and minimize their costs. Information technology is one of the tools that can help banks in this regard. Development of internet banking for services such as financial transactions and intrabank and interbank transfers has revolutionized the banking industry and has significantly reduced the costs of banks, while eliminating traditional procedures (Sadeghi Aliabad & Aghdam, 2016). Here, on-site (branch) and off-site (ATMs, internet banking, and mobile banking) services are incorporated into the proposed conceptual model.

4. Findings

4.1. Descriptive Statistics

The demographic characteristics of the participants in the survey are provided in terms of frequency and percentage in Table 2.

$$CLV = \sum_{n=1}^{N} \frac{(CRn - Cn) \times R^n}{(1+d)^n} - AC \qquad (1)$$

$$frequency = 1/T \qquad (2)$$

$$percentage = 100 * numerator/denominator \qquad (3)$$

Table 2: Demographic characteristics of the participants

Characteristic		Frequency	Percentage
Gender	Male	290	76
	Female	92	24
Marital Status	Married	52	14
	Single	330	86
Age	$<$ 30 yrs.	6	2
	31-40 yrs.	157	41
	41-50 yrs.	174	45
	$>$ 51 yrs.	45	12
Education	Below high school	11	4
	High school diploma	38	10
	Associates degree	63	16
	Bachelors degree	116	30
	Masters degree	108	28
	PhD	46	12
Income	$<$ 2m rials	3	1
	2-5m rials	226	59
	5-10m rials	105	28
	$>$ 10m rials	48	13
E-banking history	$<$ 5 yrs.	57	15
	6-10 yrs.	140	37
	11-15 yrs.	111	29
	$>$ 15 yrs.	74	19
Total		**382**	**100**

4.2. Inferential Statistics

The hypotheses are tested using partial least squares structural equation modeling (PLS-SEM) in SmartPLS. Path coefficients, coefficient of determination (R^2), predictive relevance (Q^2), goodness-of-fit (GOF), and t-test are used to measure how the model fits the data and to test the hypotheses. In addition, the average variance extracted (AVE) and composite reliability (CR) of the questionnaire are measured in SmartPLS to establish the validity of the instrument. The results are provided in Table 3.

$$CR = \frac{(\sum_{i=1}^{n} \lambda_i)^2}{(\sum_{i=1}^{n} \lambda_i)^2 + (\sum_{i=1}^{n} \delta_i)} \qquad (4)$$

$$AVE = \frac{\sum_{i=1}^{n} \lambda_i^2}{n} \qquad (5)$$

$$CronbachsAlpha = \frac{N\bar{c}}{\bar{v} + (N-1)\bar{c}} \qquad (6)$$

Table 3: Validity and reliability of the measurement model

Indicators	AVE	CR	Cronbachs Alpha
Security	0.75	0.89	0.83
Service Quality	0.77	0.92	0.89
Customer Retention	0.69	0.89	0.85
Employee Capability	0.78	0.93	0.90
Perceived Value	0.58	0.95	0.95
Satisfaction	0.79	0.92	0.87
Satisfaction	0.79	0.92	0.87
Trust	0.72	0.88	0.81
Ease of Use	0.75	0.89	0.83
Commitment	0.72	0.88	0.81
Relationship Quality	0.56	0.94	0.93
Brand Equity	0.74	0.89	0.82
CLV	1.0	1.0	1.0

The data in Table 3 show that all the values for CR and Cronbachs alpha are greater than 0.7, indicating the high reliability of the model. In addition, AVE values for all the variables are greater than 0.4. Therefore, the proposed model has acceptable validity and reliability.

Table 4: Discriminant validity of the measurement model

	Security	Brand Equity	CLV	Trust	Customer Retention	Service Quality	Satisfaction	Ease of Use	Commitment	Employee Capability
Security	0.75									
Brand equity	0.59	0.74								
CLV	0.64	0.91	1.0							
Trust	0.44	0.44	0.52	0.72						
Customer Retention	0.65	0.75	0.86	0.43	0.69					
Service Quality	0.82	0.66	0.83	0.44	0.77	0.77				
Satisfaction	0.74	0.79	0.81	0.59	0.74	0.75	0.79			
Ease of Use	0.52	0.68	0.79	0.57	0.71	0.62	0.73	0.75		
Commitment	0.63	0.68	0.73	0.59	0.74	0.65	0.79	0.69	0.72	
Employee Capability	0.63	0.79	0.82	0.58	0.71	0.66	0.78	0.61	0.71	0.78

Each value on the diagonal of the matrix in Table 4 is greater than the value below it, indicating the acceptable discriminant validity of the model.

Figure 2 provides the factor loadings of the model. Factor loadings indicate the strength of the relationships between latent variables and observed measures and take a value between 0 and 1. Factor loadings below 0.4 are considered weak and are disregarded, while factor loadings above 0.6 are considered acceptable.

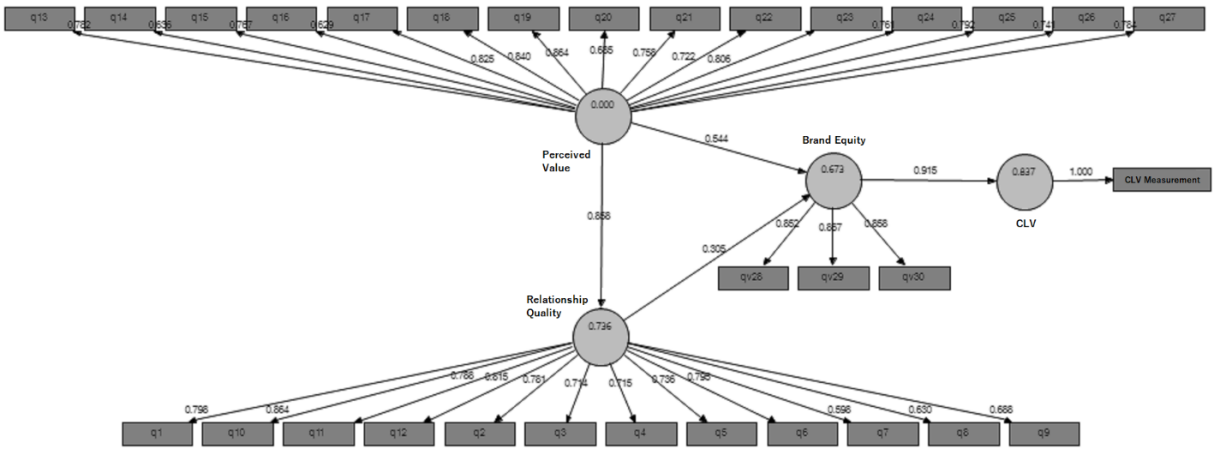

Figure 2: Factor loadings between the dimensions of the research variables.

4.2.1. Evaluating the structural model

After measuring the validity and reliability of the model, it is evaluated based on the relationships between the latent variables using t-values, coefficient of determination (R^2), and predictive relevance (Q^2). Figure 3 displays the coefficients among the variables.

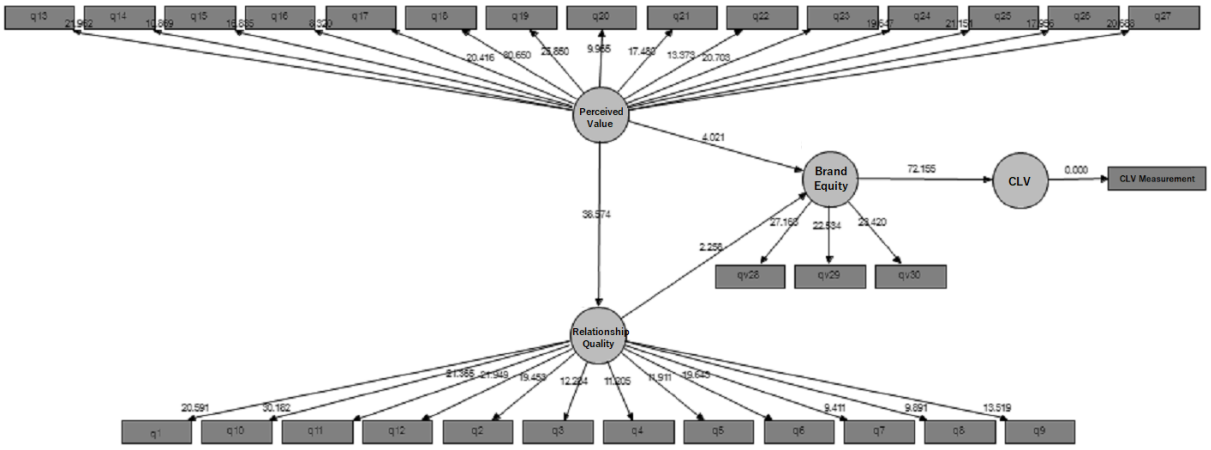

Figure 3: Coefficients among the variables.

The results show that the coefficients for all the items are greater than 1.96 and acceptable at the 95% confidence interval (CI).

The coefficient of determination (R^2) indicates the percentage of the variance in the endogenous (dependent) variable that is explained by the exogenous (independent) variable. Chin (1998) describes R^2 values of 0.67, 0.33, and 0.19 in PLS path models as substantial, moderate, and weak, respectively. Predictive relevance (Q^2) indicates the predictive power of the model and Q^2 values of 0.02, 0.15, and 0.35 are the thresholds for low, medium, and high predictive power (Stone, 1974; Geisser, 1975; Henseler et al., 2009). R^2 and Q^2 values for all the variables are provided in Table 5.

Given that the R^2 values for all the endogenous variables are within the acceptable range, it can be concluded that the structural model fit is adequate. Moreover, the R^2 values are also within the acceptable range, indicating the good predictive power of the model.

Finally, GOF is used as a measure of the overall model fit. Values of 0.01, 0.25, and 0.36 are considered small, medium, and large, respectively (Wetzels et al., 2009). The GOF for the pro-posed

Table 5: Structural model fit based on R^2 and Q^2 values

	C	Q^2
Relationship Quality	0.73	0.39
CLV	0.84	0.72
Perceived Value	-	0.53
Brand Equity	0.70	0.48
Security	-	0.48
Trust	0.35	0.23
Customer Retention	-	0.48
Service Quality	-	0.61
Satisfaction	0.76	0.56
Ease of Use	0.54	0.38
Commitment	0.66	0.46
Employee Capability	-	0.61

model is 0.728, indicating that the overall model fit is acceptable.

4.3. Hypothesis Testing

After establishing the goodness-of-fit of the measurement model, the structural model, and the overall model, the research hypotheses are tested using t-test and standardized factor loading or path coefficients. The results are provided in Table 6. Moreover, the Sobel test is used to test the significance of the mediation effect. The Z-value for this test can be calculated from the follow-ing formula at the 95% CI. Values above 1.96 indicate the significant effect of the mediating var-iable at 95% CI.

4.3.1. Mediation effect of relationship quality on the association between perceived value and brand equity

Moreover, the Sobel test is used to test the significance of the mediation effect. The Z-value for this test can be calculated from the following formula at the 95% confidence interval (CI). Values above 1.96 indicate the significant effect of the mediating variable at 95% CI. A Z-value of 2.25 is obtained for the mediation effect of relationship quality on the association between perceived value and brand equity, which is greater than 1.96 and indicates that this effect is significant at the 95% CI.

In addition to the Sobel test, Variance Accounted For (VAF) is used to determine the strength of an indirect effect. It takes a value between 0 and 1, and the closer the value is to 1, the stronger is the effect. In fact, VAF measures the ratio of the indirect effect to the total effect. The indirect effect is determined as follows:

- a = 0.888 (path coefficient between perceived value and relationship quality)
- $b = 0.305$ (path coefficient between relationship quality and brand equity)
- $c = 0.544$ (path coefficient between perceived value and brand equity)

$$VAF = (0.888 \times 0.305)/((0.888 \times 0.305) + 0.544) = 1.52$$

Since the obtained VAF (0.742) is large, the mediation effect of brand equity on the association between perceived value and CLV is significant.

Table 6: Hypothesis testing

Hypothesis	Path	Path Coefficient	t-value	Result
H1	Perceived value affects the satisfaction dimension of relationship quality.	0.864	51.94	True
H2	Perceived value affects the trust dimension of relationship quality.	0.548	13.74	True
H3	Perceived value affects the ease of use dimension of relationship quality.	0.707	17.23	True
H4	Perceived value affects the commitment dimension of relationship quality.	0.792	38.18	True
H5	Perceived value affects relationship quality.	0.858	59.18	True
H6	Perceived value affects brand equity.	0.544	7.13	True
H7	Relationship quality affects brand equity.	0.308	4.004	True
H8	Relationship quality mediates the association between perceived value and brand equity.	0.737	14.82	True
H9	Brand equity mediates the association between perceived value and CLV.	0.737	14.82	True
H10	Brand equity mediates the association between relationship quality and CLV.	0.423	2.25	True
H11	Brand equity affects CLV	0.915	72.15	True

5. Discussion and Conclusion

The purpose of this research was to explain the effect of brand equity on CLV. After a review of the literature, a structural equations model was extracted and the validity of its constructs was established. After examining the goodness-of-fit of the measurement, structural, and overall models, the hypotheses were tested to determine the significance of the relationships. The results indicated that brand equity directly and indirectly affects CLV in Refah Bank. This is consistent with Segarra-Moliner & Moliner-Tena (2016), who found evidence supporting the importance of customer perceived value in building relationship quality and in brand equity, with Chan et al. (2010), who explained CLV from the perspective of product attractiveness and marketing strate-gy, and Zhang et al. (2016), who found that perceived customer value anticipation can signifi-cantly influence CLV. In addition, consistent with Jalalzadeh et l. (2018) who showed that brand equity affects customer loyalty through relationship equity, the present research tested and con-firmed the mediation effect of brand equity on the association between perceived value and CLV.

Given the complex nature of brands as perceived by consumers, there has been a significant body of research focused on consumer evaluations and behaviors in relation to brands, such brand loyalty, brand involvement, and brand commitment (Grace et al., 2020). The present research highlights the role of brand equity and brand marketing strategies based on customer perceptions. To enhance the perceptions of quality and value among the customers of banking services, banks are recommended to focus on the factors that affect these perceptions based on the identified priorities, including quality certificates and assurances, ease of access to systems, and the effi-ciency of the services. Moreover, factors that affect relationship quality (i.e., satisfaction, trust, ease of use, and commitment) must be taken into consideration in programs intended to increase customer loyalty to a brand.

One of the limitations of this study is in its scope, as it focuses on one brand in one sector of a country. Therefore, future research can expand this model to other brands, sectors, and countries. Another limitation is related to CLV measures. The base models from Segarra-Moliner & Moliner-Tena (2016) and Zhang et al. (2016) have inspired the conceptual model proposed in the present research, and the reason for adopting these models is the fact that they are simple and easily applicable to banking services. It must be noted that there are other alternatives that could provide more accurate measures of CLV, and future studies can identify the limitations in the applicabil-ity of each of these models.

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