
An integrated framework for customer value and customer-relationship-management performance: a customer-based perspective from China

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Keywords

Customer retention, Relationship marketing, Customer satisfaction, Brand loyalty, Behaviour, China

Abstract

In the modern customer-centred era, customer value is a strategic weapon in attracting and retaining customers. Delivering superior customer value has become a matter of ongoing concern in building and sustaining competitive advantage by driving customer-relationship-management (CRM) performance. However, related studies are rather divergent, the key dimensions of customer value remain unclear, and there is no agreement on the evaluation of CRM performance. This paper develops an integrative framework for customer value and CRM performance based on the identification of the key dimensions of customer value. Emphasising the customer equity-based view, the paper explores the decomposed effects of customer value on CRM performance in terms of relationship quality and customer behaviours. In doing so, a structural equation model is developed using the partial least square method supported by an empirical investigation of customers in China.

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1. Introduction

Customer value is a strategic weapon in attracting and retaining customers and has become one of the most significant factors in the success of both manufacturing businesses and service providers (Gale, 1994; Zeithaml, 1988; Zeithaml *et al.*, 1996; Woodruff, 1997; Parasuraman, 1997). Delivering superior customer value has become an ongoing concern in building and sustaining competitive advantage by driving customer relationship management (CRM) performance. As many researchers have suggested, firms should reorient their operations towards the creation and delivery of superior customer value if they are to improve their CRM performance (Jensen, 2001; Day, 1994; Slater, 1997).

However, the growing body of knowledge about customer value is rather fragmented, different points of view are advocated with no widely accepted way of pulling views together and related empirical study is very limited. Furthermore, relevant studies have not yet yielded any unambiguous interpretations of the key dimensions of customer value (Zeithaml, 1988; Patterson *et al.*, 1997; Woodruff, 1997; McDougall and Levesque, 2000; Lapierre, 2000). Little is known about the relative importance of each dimension of customer value in improving different dimensions of CRM performance. Although there is a significant body of knowledge about the concept of customer value and its relationships with service quality and customer satisfaction, there has been relatively little empirical research on the subject. Only a few studies have focused on how superior customer value is constituted in the perspective of customers and how a more reliable and valid measurement scale for such a complicated and important construct might be developed (Sheth *et al.*, 1991; Sweeney and Soutar, 2001). Even in the latest typical study, Sweeney and Soutar (2001) seem to have considered price to be the only sacrifice of customers in measuring customer value –

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although it has been widely agreed that many other kinds of sacrifices (such as opportunity cost, psychological cost, and maintenance and learning cost) can exert determining influences on the perception of customer value besides “price” (Woodruff, 1997; Slater, 1997; Day, 1994). In fact, the lack of a managerial understanding of “what constitutes superior customer value and how to operationalize it” has become one of the most influential barriers for both researchers and practitioners.

As more firms practise CRM, the question of how to evaluate performance remains a significant challenge, and there is a strong tendency for research to emphasise one dimension of CRM performance while ignoring others, which makes it much more difficult for managers to make a deep understanding of the practical implications of different performance measures. Few studies, if any, have been conducted to examine the differential effects of individual dimensions of customer value on the specific dimensions of CRM performance. This makes it almost impossible for managers to determine and identify those value creation and delivery processes and activities that contribute the most to the intended performance aspect of CRM to maximize customer equity of their firms. In practice, empirically investigating the effects of key dimensions of customer value is extremely important – because the delivery of superior customer value can involve significant costs for firms. In some cases, there can be concern that such costs could outweigh the potential financial benefits. In other words, although firms often acknowledge that superior customer value can lead to higher profits, they may be afraid to practise because of a concern that significant costs may reduce profits. It is, therefore, imperative that firms understand the effects of each dimension of customer value and allocate their limited resources accordingly.

Besides contributing to the area of customer value and CRM performance in general as mentioned above, this paper also makes important contributions to this subject by examining the securities’ industry in the Chinese context – a country that is undergoing reforms from a centrally planned economy to a market economy since conducting such a study within the context of a transitional economy is more critical than doing that within a market economy. Market power is growing, but the market infrastructure has not yet been well developed (Peng and Health, 1996) and the application of customer value knowledge and CRM is therefore rather limited. However, in a transitional economy, firms that have a deep understanding of the key dimensions of customer value and their influences on different aspects of

CRM performance are more likely to build up sustained differential advantages and accordingly, superior firm performance. Thus, it is important to understand how a firm achieves superior CRM performance by creating and delivering superior customer value and emphasizing some dimensions of customer value based on the role they may play in influencing CRM performance. Furthermore, comparatively speaking, less related knowledge has been accumulated to provide special guidance in developing countries than that for developed economies, although more people belong to the former. This study, conducted within the context of the transitional economy of China, can help to redress this imbalance in empirical work.

This study, therefore, presents an empirical investigation of an integrated framework of customer value and CRM performance by identifying the key dimensions of customer value, and by examining their differentiated effects on CRM performance in terms of the perspective of customers. By drawing on a growing body of literature on customer value, customer relation management and other highly related findings, the paper defines and measures customer value in terms of get (benefit) and give (sacrifice) components (Woodruff, 1997; Slater, 1997; Day, 1994) – thus adopting a broader concept of sacrifices rather than the simple price assessment suggested by Sweeney and Soutar (2001); and several key dimensions other than price and quality are identified conceptually and tested empirically. The evaluation of CRM performance is discussed on the basis of models of customer behaviour, customer equity/customer asset (Rust *et al.*, 2000; Blattberg *et al.*, 2001), and relationship quality. Furthermore, much attention is given to the empirical examination of how each dimension of customer value may influence specified aspects of CRM performance differently. It is expected that this study would help managers to understand what customers really value and where they should focus their attention to achieve this needed market space advantages and maximize the benefits of CRM.

The paper is organised as follows. Following this introduction, the theoretical background, an integrated conceptual framework, and the key hypotheses are provided. The next section presents the methodology of the study. Then the empirical analysis is conducted by developing structural equation models using the partial least square (PLS) method based on a customer survey of more than 300 respondents conducted in China, and all the hypotheses proposed in this paper are tested. Finally, conclusions and implications are presented, and limitations and future research directions are discussed.

2. Theoretical background and conceptual framework

With the increasingly intense business competition and the strong trend of globalization, the role of the customer has changed from that of a mere consumer to a multi-faceted role as consumer, co-operator, co-producer, co-creator of value, and co-developer of knowledge and competencies, which implies a much more important position of the customer than ever. As a result, there has been a substantial increase in interest in the creation and delivery of value to customers and the effective management of customer relationship. In particular, firms are seeking to retain existing customers and attract new customers by targeted value creation activities. To do so, they need an in-depth understanding of the underlying dimensions of customer value, the practical implications of different performance measures of CRM and knowledge of how to improve each of them by focusing on one specific dimension of customer value or their combinations. Figure 1 illustrates an integrated framework for customer value and customer-relationship performance that can be used to achieve this purpose. On the left side of the diagram, functional value, social value, emotional value, and customer perceived sacrifices are proposed as the key dimensions of customer value. On the right side, CRM performance is depicted in terms of both tangible aspects and intangible aspects. For the former, emphasis is given to the possible customer behaviours such as customer retention (relationship length), cross buying/repurchase (relationship depth and breadth), word of mouth, and so on, which are visible themselves with the potential to produce such tangible benefit as profit and are considered to be the ultimate focus of CRM performance in this study. In practice, it is such customer behaviours that constitute the underlying value of customers for a

firm and provide the revenue streams expected from establishing and maintaining profitable customer relationships. These customer behaviours are based on so called “relationship quality” (Crosby *et al.*, 1990; Dorsch *et al.*, 1998).

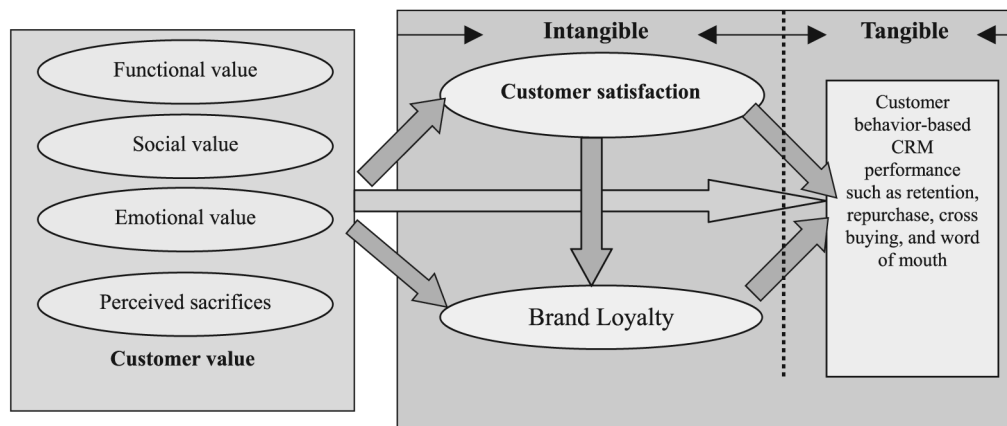
2.1 Customer value

Driven by demanding customers, keen competition, and rapid technological change, many firms have sought to deliver superior customer value (Band, 1991; Day, 1994; Gale, 1994; Naumann, 1995; Butz and Goodstein, 1996; Woodruff, 1997). Delivering superior customer value is now recognised as one of the most important factors for the success of any firm now and in the future because it has a significant impact on the behavioural intentions of customers and because it has an important role in providing managers with insights into how to achieve superior CRM performance.

2.1.1 Definition of customer value

Although the significance of customer value is widely recognised, research about customer value is quite fragmented and there is no clear definition of the concept. Early studies on the profit impact of market strategies (PIMS) argued that value is determined by product quality, relative price, and customer expectations. Zeithaml (1988) considered value to be the customer’s overall assessment of the utility of a product based on the perception of what is received and what is given. Dodds *et al.* (1991) argued that buyers’ perceptions of value represent a trade-off between the quality or benefits they receive in the product and the sacrifice they perceive in paying the price. Gale (1994) considered value to be market perceived quality adjusted for relative product price. Butz and Goodstein (1996) defined it as the emotional bond established between a customer and a producer after the customer has used a

Figure 1 The integrated framework for customer value and CRM performance



salient product or service produced by that supplier. Woodruff (1997) defined customer value as a customer-perceived preference for, and evaluation of, product attributes, attribute performances, and consequences in terms of the customer's goals and purposes. Although these approaches differ, it is clear that there are some areas of consensus among the different concepts. Customer value is inherent in (or linked to) the use of certain products or services, and customer value is perceived by customers (rather than being objectively determined by sellers or other stakeholders). Moreover, these perception processes typically involve a trade-off between what customers receive (such as quality, benefits, and utilities) and what they sacrifice (such as price, opportunity cost, and maintenance and learning cost).

The present study concurs with the majority of researchers who have defined customer value in terms of get (benefit) and give (sacrifice) components (Woodruff, 1997; Slater, 1997; Day, 1994) – in contrast to those researchers who have argued that perceived value consists only of benefits (Hamel and Prahalad, 1994). Following Woodruff (1997), the present study posits that customer value is derived from the perception, preference, and evaluation of customers, and that any consideration of customer value should take account of these factors.

2.1.2 Key dimensions of customer value

As far as the significance of customer perceived value is concerned, researchers are now paying more attention to the operationalization of this concept. Traditionally, customer value has been understood in terms of quality and price. However, other ways of creating and delivering superior customer value are now being explored. As Sweeney and Soutar (2001) have indicated, it is imperative that firms enquire about other factors that might constitute perceived benefits and sacrifices, and the managerial implications of these factors, if they are to understand the perception and evaluation process of customers and reconfigure their resources and activities accordingly. For example, Kotler (1997) argued that customer value can be understood in terms of product value, service value, employee value, and image value. However, this approach is largely derived from the standpoint of a firm, not that of customers, or at least not totally customer based. The broad theoretical framework developed by Sheth *et al.* (1991) was somewhat different in that they suggested five dimensions of value from the customer's perspective (social, emotional, functional, epistemic, and conditional) as providing the best foundation for extending the value construct. However, it is worth noting that

not all these dimensions have equal significance at any time, although they are related in some sense. More recently, Sweeney and Soutar (2001) differentiated two aspects of functional value – quality and price – and developed the so-called “PERVAL” model. In this model, epistemic value (which relates to the surprise or novelty aspect of a product) and conditional value (which refers to the conditional effects of a specific situation on value perceptions) were excluded – because these two dimensions are not applicable (or less important) when considering the purchase of a durable good, which was the focus of their study.

The present study adopts the framework suggested by Sweeney and Soutar (2001) and tests it in the securities service industry of China, in which the creation and delivery of superior customer value and the effective management of customer relationship are very important in the increasingly intense competition of this industry. However, as previously noted, sacrifices other than price are considered in the present study. The term “sacrifice” refers to what is given up to acquire or consume a product or service. This includes non-monetary factors such as time, effort or energy (Heskett *et al.*, 1997; Zeithaml, 1988), which may play an even more important role than price. For example, many customers count time rather than dollar cost as their most precious asset (Carothers and Adams, 1991). So it has been expected to extend the price dimension and consider both monetary costs and non-monetary costs as two important elements of customer sacrifices instead of price only in this study. Our customer focus group discussion and exploratory factor results have also confirmed such a point of view. The present study, therefore, posits that customer value can be better understood in terms of the four key dimensions previously illustrated on the left side of Figure 1, each of which may play a different role in the customer perception process and thus contribute differently to the performance of CRM. In this diagram, “emotional value” refers to the utility derived from the affective states that a product or service generates; “social value” refers to the social utility derived from the product or service, “functional value” refers to the utility derived from the perceived quality and expected performance of the product or service, and “perceived sacrifice” refers to the loss derived from the product or service due to the increment of its perceived short-term and long-term costs.

2.2 Performance of CRM

2.2.1 Customer behaviour-based CRM performance

It is believed that CRM performance should be measured ultimately in terms of customer behaviours since they are the underlying sources of

value of current customers of a firm and have the potential to increase the future revenue streams associated with them and those prospective customers. Because the fundamental objective of CRM is to ensure steady streams of revenue and maximisation of customer lifetime value or customer equity, customer behaviours that might bring revenue streams become strategically significant (Grant and Schlesinger, 1995; Bolton *et al.*, 2002). For example, researchers have tried to understand relationship length, depth, and breadth in terms of customer retention, intensity, or usage level of services or products over time, cross-buying or add-on purchase, and word of mouth (Blattberg *et al.*, 2001; Reichheld and Teal, 1996; Bettencourt, 1997), which usually implies a fundamental increment of customer lifetime value or customer equity. However, little is known about how customer value affects these customer behaviours, although many theoretical studies have indicated that superior customer value, as perceived by customers, has a significant influence on the purchasing and repurchasing intentions of customers and their decisions to retain a close relationship with a firm. According to the study of Mazumdar (1993), customers are becoming more value-oriented and are not simply influenced by high quality or lower price. Rather, they tend to make a reasonable trade-off between the perceived benefits and perceived sacrifices in the process of obtaining and consuming products or services. However, not all the customers value the same potential benefits and care for the same sacrifices at any given time.

The following hypotheses are therefore proposed:

- H1a.* Emotional value has a direct and positive effect on customer behaviour-based CRM performance.
- H1b.* Social value has a direct and positive effect on customer behaviour-based CRM performance.
- H1c.* Functional value has a direct and positive effect on customer behaviour-based CRM performance.
- H1d.* Perceived sacrifice has a direct and negative effect on customer behaviour-based CRM performance.

However, other studies have shown that such customer behaviours are also influenced by factors such as customer satisfaction and brand loyalty (Reichheld and Teal, 1996; Szymanski and Henard, 2001; Bolton, 1998; Mittal and Kamakura, 2001) and that customer value has significant influence on customer satisfaction and brand loyalty. It therefore appears that customer value not only has a direct influence on customer

behaviour-based CRM performance, but also has indirect effects.

2.2.2 Relationship quality

Besides customer behaviour-based CRM performance we defined and emphasized above, many researchers have emphasized the role of relationship quality as an intangible aspect of CRM performance, and dimensions such as satisfaction, commitment, and trust have been used to measure the complicated concept "relationship quality" (Crosby *et al.*, 1990; Dorsch *et al.*, 1998). However, there is no consensus on which dimensions make up relationship quality. As shown in Figure 1, this study considered both customer satisfaction and brand loyalty – with the latter considered as a kind of lasting intention to build and maintain a long-term relationship, as the highest level of relational bonding, and as one dimension of relationship quality instead of commitment (Edvardsson *et al.*, 2000; Reichheld and Teal, 1996). High customer satisfaction and brand loyalty means that fewer customers will defect, and the long-term effects on firm performance can be significant. For example, Reichheld and Teal (1996) showed that a 5 per cent increase in customer retention can have a 30-95 per cent effect on customer net present value and a similar effect on corporate profits.

2.2.2.1 Brand loyalty. The high cost involved in the acquisition of new customers makes the early stages of a new customer relationship unprofitable (Reichheld and Sasser, 1990). Only in the later stages, with the decreased cost involved in serving a loyal customer, does such a relationship become more profitable. There are divergent streams of research on the concept of loyalty. One is the stochastic approach, in which loyalty is considered a behaviour. According to this approach, the individual who buys the same brand consistently is said to be "loyal" to this brand (Kuehn, 1962). However, this approach cannot distinguish between true loyalty and spurious loyalty. The other approach treats loyalty as an attitude, rather than a mere behaviour. For example, Assael (1992) defined brand loyalty as a favourable attitude towards a brand, thus resulting in consistent purchase of the brand over time – a view supported by Keller (1993). The present study follows the view of Assael (1992) in defining brand loyalty as a customer's favourable attitude towards the provider, thus resulting in repurchasing behaviour.

According to the findings of Zeithaml *et al.* (1996), loyal customers tend to build and strengthen the relationship with a firm and behave differently from non-loyal customers. By influencing directly both purchase and non-purchase behaviours of customers, loyal customers

contribute to the financial performance of a firm. For example, loyal customers emphasise a close relationship with a firm, with lower price elasticity. In addition, such loyal customers pass on favourable word-of-mouth referral (Brown *et al.*, 1987). Loyal customers thus put greater emphasis on social and emotional value, and studies have found that superior customer value creation and delivery can help firms to build close emotional links with targeted customers (Butz and Goodstein, 1996). Superiority in specific dimensions of customer value can thus improve brand loyalty in such customers and influence their behaviour positively. The following hypotheses are therefore proposed:

- H2a. Emotional value has a direct and positive effect on brand loyalty.
- H2b. Social value has a direct and positive effect on brand loyalty.
- H2c. Functional value has a direct and positive effect on brand loyalty.
- H2d. Perceived sacrifice has a direct and negative effect on brand loyalty.
- H2e. Brand loyalty has a positive effect on customer behaviour-based CRM performance.

2.2.2.2 Customer satisfaction. Generally speaking, there are at least two different conceptualisations of customer satisfaction: transaction-specific; and cumulative (Boulding *et al.*, 1993). From a transaction-specific perspective, customer satisfaction is viewed as a post-choice evaluative judgment of a specific purchase occasion (Oliver, 1981). Behavioural researchers have developed a rich body of literature on the antecedents and consequences of this type of customer satisfaction at the individual level (Zeithaml, 1988). In contrast, cumulative customer satisfaction is an overall evaluation based on the total purchase and consumption experiences with a product or service over time (Fornell *et al.*, 1996; Johnson and Fornell, 1991), which is a more fundamental indicator of the firm's past, present and future performance. Cumulative customer satisfaction motivates a firm's investment in customer satisfaction, and this is the approach adopted in the present study.

As with brand loyalty, customer satisfaction is also influenced by customer value, and the two concepts (brand loyalty and customer satisfaction) exert their effects on customer behaviour-based CRM performance simultaneously. For example, customer value contributes to an improvement in customer satisfaction (Fornell *et al.*, 1996; Bojanic, 1996) and customer satisfaction is a consequence of customer-perceived value (Fornell *et al.*, 1996; Hallowell, 1996). Customer satisfaction is usually perceived to be a key indicator of a firm's market

share and profitability, and an important indicator of a firm's overall financial health. A satisfied customer will show a strong tendency to be loyal and repeat the purchase of the goods or services, and thus increase a firm's market share and profits, which signifies its significance to successful competition in customer-centred era.

Furthermore, it is likely that a satisfied customer will spread positive word of mouth among his or her acquaintances. Based on the above discussion, the following hypotheses can be proposed:

- H3a. Emotional value has a direct and positive effect on customer satisfaction.
- H3b. Social value has a direct and positive effect on customer satisfaction.
- H3c. Functional value has a direct and positive effect on customer satisfaction.
- H3d. Perceived sacrifice has a direct and negative effect on customer satisfaction.
- H3e. Customer satisfaction has a positive effect on customer behaviour-based CRM performance.
- H3f. Customer satisfaction has a positive effect on brand loyalty.

3. Methodology

3.1 Sampling and data collection

Following a pilot study to identify and refine the measurement items used in the present study, a mail survey was conducted. Two large Chinese securities firms were selected – one in Shenzhen and the other in Beijing, with their customers as respondents. A stratified sampling was used to select approximately equal numbers of customers from each firm; 400 customers were chosen randomly from each firm's database. A copy of the finalised questionnaire (together with a pre-paid, self-addressed envelope) was sent to each of these selected customers. Subjects were asked to assess items of various constructs (such as customer value, customer behaviour-based CRM performance, customer satisfaction, and brand loyalty) on the basis of a seven-point Likert scale. The descriptors ranged from "strongly disagree", to "somewhat disagree", "slightly disagree", "neutral", "slightly agree", "somewhat agree", and, finally, "strongly agree". After ten days, a telephone follow-up was conducted to remind respondents to return the completed questionnaires on time. After one month, 237 questionnaires had been returned (termed the "early responses"). A call was then made to each of the customers whose questionnaires had not been received. Twenty days later 89 more questionnaires had been received (termed the "late

responses”). Thus, in total, 326 questionnaires were collected from customers. Six questionnaires were considered unsuitable because they contained too many missing values (four from “early respondents” and two from “late respondents”). In all, 320 questionnaires were thus considered valid and were used for empirical analysis – a valid response rate of 40.0 per cent.

As suggested by Armstrong and Overton (1977), the study compared early responses with late responses. According to a *t*-test analysis, these two groups of respondents had no significant differences across all of the key variables. Accordingly, it seems that non-response bias did not appear to be a significant problem.

3.2 Measures development

Measures of the constructs were developed in several stages. In the first stage, tentative measurements were adapted from the extant literature. In the second stage, a list of defined constructs and measures was submitted to a customer focus group. Following this, a pilot study was conducted among 20 customers – dealing with such matters as instructional clarity, item clarity, relevance, and the time needed to complete the questionnaire – in an attempt to establish the reliability of the measures effectively. So the research instrument in this study is based on various validated scales and some new items and they are revised on the basis of the pilot studies.

The measures for each dimension of customer value were mainly adapted from Sheth *et al.* (1991) and Sweeney and Soutar (2001). Slight changes to wording were made with respect to perceived sacrifices on the basis of conceptual studies and the focus group of the present study. As shown in Table I, a final total of 18 items was used to measure all dimensions of customer value.

On the basis of relevant studies (Blattberg *et al.*, 2001; Reichheld and Teal, 1996; Bettencourt, 1997) and focus group discussion, three items were developed and tested in the pilot study to measure customer behaviour-based CRM performance. For customer satisfaction, three items were adapted from Wang and Lo (2002). For measures of brand loyalty, three items were used, based on Keller (1993) and Assael (1992).

4. Data analysis and structural equation model building

There are two estimation techniques for structural equation modelling (SEM). The first is maximum likelihood (ML) covariance structural analysis (Bollen, 1989). The other is partial least squares

(PLS) variance analysis (Chin, 1998). Although the PLS method is not as popular as the ML method, it does provide a way to avoid problems of improper solutions and factor indeterminacy as well as the violations of distributional assumptions which can be associated with the ML method. Interest in the PLS method has been increasing in recent years because of its ability to model latent constructs under conditions of non-normality and because of the superior predictive power of its models. Given that the present study is exploratory in nature and that one of its major concerns is the predictive power of the research model, the PLS method was used to estimate the models.

The adequacy of each multi-item scale in capturing its construct was assessed using a two-step approach: by checking internal consistency reliability, convergent validity, and discriminant validity; and by testing the propositions via the causal models. However, before checking the measurement model, the customers’ understanding of the concept of customer value was assessed by exploratory factor analysis on the full set of variables used to measure customer value. In total, four factors were initially identified. Taken together, they explained 86.1 per cent of the total variance. The results of this analysis confirmed that customer value can be understood in terms of emotional value, social value, functional value, and perceived sacrifices.

4.1 Measurement model

The composite reliability for internal consistency was first demonstrated. The values for all constructs were above the suggested threshold of 0.70, with a minimum of 0.8384 (see Table I). In addition, the standardised factor loadings for all items were above the suggested cut-off of 0.60 (Hatcher, 1994) (with a minimum of 0.8603), and all were significant with strong evidence of convergent validity. The average variance extracted (AVE) of each construct in the model was more than 0.50, which meets the criterion that a construct’s AVE should be at least higher than 50 per cent (to guarantee that more valid variance is explained than error) (Fornell and Larcker, 1981).

The constructs should also show high discriminant validity. According to Fornell and Larcker (1981), this can be demonstrated by the fact that the square root of AVE of each construct should be generally higher than the correlations between it and any other constructs in the model (see Table II). This demonstrated that the constructs are both conceptually and empirically distinct from each other. Finally, the R^2 for the endogenous variables (such as customer satisfaction, brand loyalty, and customer behaviour-based CRM performance) were

Table I Confirmatory factor analysis results and relevant composite reliability

Constructs and items	Loading	t-value	Alpha
CRM performance			
Behaviour-based CRM performance			
Q1 I would like to repurchase the offerings and buy more from this firm (y31)	0.8564	36.128	0.8384
Q2 I would like to recommend the offerings to others (y32)	0.8949	64.304	
Q3 I would like to keep close relationship for a longer period (y33)	0.8603	32.887	
Relationship quality			
Brand loyalty			
Q4 I feel I am loyal to this brand/offerings of this firm (y21)	0.9486	29.773	0.9143
Q5 The brand/offerings of this firm is my first choice (y22)	0.9300	71.656	
Q6 Even with more choices, I will not choose other brands/offerings (y23)	0.8985	39.034	
Customer satisfaction			
Q7 The offerings always meet my expectation (y11)	0.9272	82.967	0.9210
Q8 Taking my experience with other companies, I am satisfied with our offerings and us (y12)	0.9370	93.513	
Q9 The offerings always meet the desirable level (y13)	0.9259	63.039	
Key dimensions of customer value			
Customer perceived sacrifices			
Q10 The brand/service of this firm is reasonably priced (x41)	0.9101	50.326	0.9625
Q11 The brand/service of this firm offers value for money based on previous experiences (x42)	0.9258	68.991	
Q12 The brand/service of this firm would be economical (x43)	0.9219	75.775	
Q13 The brand/service of this firm is a good product for the price deducted by discounts (x44)	0.9186	66.319	
Q14 The brand/service of this firm is value for money compared with that of major competitors (x45)	0.9184	56.109	
Q15 The choice of transacting with the firm is a right decision when price and other expenses are considered (x46)	0.9158	73.135	
Functional value			
Q16 The firm always delivers superior service (x11)	0.9251	75.476	0.9337
Q17 The offerings of this firm are of high quality (x12)	0.9086	62.383	
Q18 Consistent quality is well made (x13)	0.8970	58.539	
Q19 The offerings of this firm make me feel confident (x14)	0.9222	72.424	
Emotional value			
Q20 The brand/service of this firm is the one that I would enjoy (x31)	0.8998	70.673	0.9549
Q21 The brand/service of this firm make me want to purchase and use it (x32)	0.9298	78.403	
Q22 The brand/service of this firm is the one that I would feel relaxed about using it (x33)	0.9352	80.303	
Q23 The brand/service of this firm would make me feel good (x34)	0.9098	45.984	
Q24 The brand/service of this firm would give me pleasure (x35)	0.9232	67.643	
Social value			
Q25 The brand/service of this firm would improve the way I am perceived (x21)	0.9396	90.654	0.9128
Q26 The brand/service of this firm would help me make a good impression on other people (x22)	0.9208	69.093	
Q27 The brand/service of this firm would give its owners the social approval (x23)	0.9068	43.357	

Table II Correlation matrix and square roots of average variance extracted (AVE)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Customer loyalty (1)	0.926						
Customer satisfaction (2)	0.758	0.930					
Functional value (3)	0.658	0.756	0.913				
Perceive sacrifices (4)	-0.681	-0.790	-0.719	0.918			
Behaviour-based CRM performance (5)	0.348	0.447	0.469	-0.636	0.902		
Emotional value (6)	0.673	0.772	0.804	-0.713	0.744	0.920	
Social value (7)	0.676	0.818	0.652	-0.723	0.725	0.676	0.925

Notes: Correlation coefficients are included in the lower triangle of the matrix, and the square root of AVE is on the diagonal

0.7956, 0.6013 and 0.8052 respectively – which indicated a strong predictive power for the structural equation model.

4.2 Structural equation model building: hypotheses testing

Having established confidence in the measurement model, an empirical structural equation model was developed and specified (as illustrated in Figure 2). All hypotheses proposed and parameters to be estimated in this paper are shown in Figure 2, and relevant equations are indicated in Table III by taking the partial least-square approach.

The results of the analysis are reported in Table IV, which support *H1c*, *H2e*, and *H3e*. The PLS-graph path coefficients were, respectively, 0.172 ($t = 2.238$), 0.479 ($t = 8.466$) and 0.235 ($t = 2.318$), which are statistically significant (at 0.05 or 0.025). These results support the hypotheses that customer satisfaction, brand loyalty, and functional value have positive effects on customer behaviour-based CRM performance. However, the study finds no significant evidence of the influence of the other dimensions of customer value on customer behaviour-based CRM performance. *H1a*, *H1b*, and *H1d* are therefore not

supported. In other words, in the securities market of China, brand loyalty is the most significant influence on customer behaviour-based CRM performance, with customer satisfaction the next most significant. However, among all the dimensions of customer value, only functional value has a significant direct effect on customer behaviour-based CRM performance. This dimension of customer value determines purchasing/repurchasing and word-of-mouth referral to a large extent. This might be due to customers becoming more mature since a more open and competitive market came into being after China’s reforms of 1979. Such customers might be now focusing on the core functions of the services provided by securities firms.

The results in Table IV also support *H3a*, *H3b*, *H3c*, and *H3d*. The path coefficients were, respectively, 0.157 ($t = 1.649$), 0.527 ($t = 7.561$), 0.162 ($t = 2.204$) and -0.139 ($t = -1.781$), which are statistically significant (at 0.05 or 0.025). These results indicate that each of these dimensions of customer value has a significant direct effect on customer satisfaction.

As expected, customer-perceived sacrifice has a significant negative effect on customer satisfaction, but the effect is smaller than other dimensions of

Figure 2 Structural equation model specification and relevant hypotheses based on PLS method

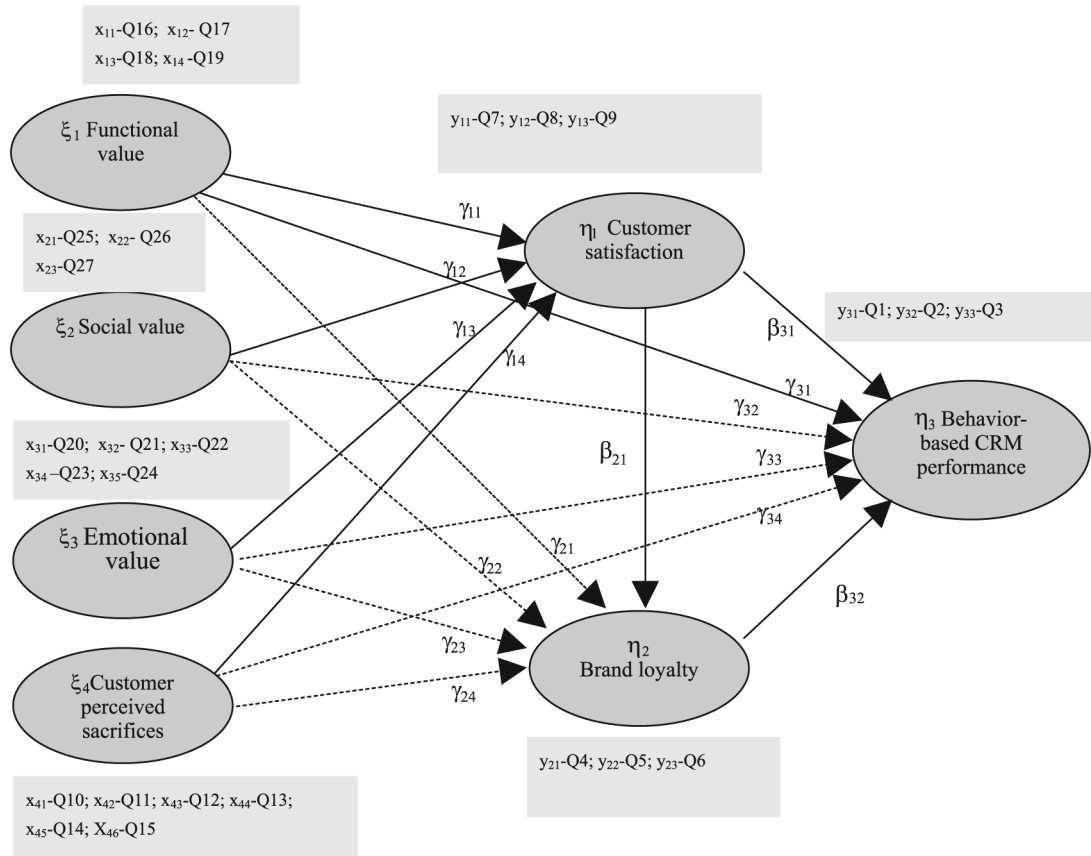


Table III Structural equation model specification and relevant equations based on PLS method

Latent structural equations ($\eta = \eta B + \xi \Gamma + \zeta$)	$\eta_1 = \gamma_{11}\xi_1 + \gamma_{12}\xi_2 + \gamma_{13}\xi_3 + \gamma_{14}\xi_4 + \zeta_1$ $\eta_2 = \beta_{21}\eta_1 + \gamma_{21}\xi_1 + \gamma_{22}\xi_2 + \gamma_{23}\xi_3 + \gamma_{24}\xi_4 + \zeta_2$ $\eta_3 = \beta_{31}\eta_1 + \beta_{32}\eta_2 + \gamma_{31}\xi_1 + \gamma_{32}\xi_2 + \gamma_{33}\xi_3 + \gamma_{34}\xi_4 + \zeta_3$			
Reflective measurement equations ($x = \Lambda_x \xi + \varepsilon_x, y = \Lambda_y \eta + \varepsilon_y$)	$x_{11} = \lambda_{x11}\xi_1 + \varepsilon_{x11},$ $x_{12} = \lambda_{x12}\xi_1 + \varepsilon_{x12},$ $x_{13} = \lambda_{x13}\xi_1 + \varepsilon_{x13},$ $x_{14} = \lambda_{x14}\xi_1 + \varepsilon_{x14}$	$x_{21} = \lambda_{x21}\xi_2 + \varepsilon_{x21},$ $x_{22} = \lambda_{x22}\xi_2 + \varepsilon_{x22},$ $x_{23} = \lambda_{x23}\xi_2 + \varepsilon_{x23},$	$x_{31} = \lambda_{x31}\xi_3 + \varepsilon_{x31},$ $x_{32} = \lambda_{x32}\xi_3 + \varepsilon_{x32},$ $x_{33} = \lambda_{x33}\xi_3 + \varepsilon_{x33},$ $x_{34} = \lambda_{x34}\xi_3 + \varepsilon_{x34},$	$x_{41} = \lambda_{x41}\xi_4 + \varepsilon_{x41}$ $x_{42} = \lambda_{x42}\xi_4 + \varepsilon_{x42}$ $x_{43} = \lambda_{x43}\xi_4 + \varepsilon_{x43}$ $x_{44} = \lambda_{x44}\xi_4 + \varepsilon_{x44}$ $x_{45} = \lambda_{x45}\xi_4 + \varepsilon_{x45}$ $x_{46} = \lambda_{x46}\xi_4 + \varepsilon_{x46}$
Weight relations ($\hat{\xi} = \Omega_x x, \hat{\eta} = \Omega_y y$)	$y_{11} = \lambda_{y11}\eta_1 + \varepsilon_{y11},$ $y_{12} = \lambda_{y12}\eta_1 + \varepsilon_{y12},$ $y_{13} = \lambda_{y13}\eta_1 + \varepsilon_{y13},$ $y_{21} = \lambda_{y21}\eta_2 + \varepsilon_{y21},$ $y_{22} = \lambda_{y22}\eta_2 + \varepsilon_{y22},$ $y_{23} = \lambda_{y23}\eta_2 + \varepsilon_{y23},$ $y_{31} = \lambda_{y31}\eta_3 + \varepsilon_{y31}$ $y_{32} = \lambda_{y32}\eta_3 + \varepsilon_{y32}$ $y_{33} = \lambda_{y33}\eta_3 + \varepsilon_{y33}$			
	$\hat{\xi}_1 = \omega_{\xi 11}x_{11} + \omega_{\xi 12}x_{12} + \omega_{\xi 13}x_{13} + \omega_{\xi 14}x_{14}$ $\hat{\xi}_2 = \omega_{\xi 21}x_{21} + \omega_{\xi 22}x_{22} + \omega_{\xi 23}x_{23}$ $\hat{\xi}_3 = \omega_{\xi 31}x_{31} + \omega_{\xi 32}x_{32} + \omega_{\xi 33}x_{33} + \omega_{\xi 34}x_{34}$ $\hat{\xi}_4 = \omega_{\xi 41}x_{41} + \omega_{\xi 42}x_{42} + \omega_{\xi 43}x_{43} + \omega_{\xi 44}x_{44} + \omega_{\xi 45}x_{45} + \omega_{\xi 46}x_{46}$ $\hat{\eta}_1 = \omega_{\eta 31}y_{31} + \omega_{\eta 32}y_{32} + \omega_{\eta 33}y_{33}$ $\hat{\eta}_2 = \omega_{\eta 41}y_{41} + \omega_{\eta 42}y_{42} + \omega_{\eta 43}y_{43} + \omega_{\eta 44}y_{44} + \omega_{\eta 45}y_{45} + \omega_{\eta 46}y_{46}$ $\hat{\eta}_3 = \omega_{\eta 51}y_{51} + \omega_{\eta 52}y_{52} + \omega_{\eta 53}y_{53} + \omega_{\eta 54}y_{54} + \omega_{\eta 55}y_{55}$			

Table IV PLS path analysis results

Hypotheses	Proposed relationships		Path coefficient	t-values	Assessment
1a	Behaviour-based CRM performance < Emotional value		0.078	0.691	N
1b	Behaviour-based CRM performance < Social value		0.056	0.441	N
1c	Behaviour-based CRM performance < Functional value		0.172	2.238**	S
1d	Behaviour-based CRM performance < Perceived sacrifices		-0.024	-0.305	N
2a	Brand loyalty < Emotional value		0.103	0.924	N
2b	Brand loyalty < Social value		0.108	1.184	N
2c	Brand loyalty < Functional value		0.076	0.682	N
2d	Brand loyalty < Perceived sacrifices		-0.088	-0.808	N
2e	Behaviour-based CRM performance < Brand loyalty		0.479	8.466**	S
3a	Customer satisfaction < Emotional value		0.157	1.649*	S
3b	Customer satisfaction < Social value		0.527	7.561**	S
3c	Customer satisfaction < Functional value		0.162	2.204**	S
3d	Customer satisfaction < Perceived sacrifices		-0.139	-1.781*	S
3e	Behaviour-based CRM performance < Customer satisfaction		0.235	2.318**	S
3f	Brand loyalty < Customer satisfaction		0.460	4.286**	S

Notes: * Significant at $p < 0.05$; ** significant at $p < 0.025$

customer value. This might be due to the fact that all securities firms are required to charge the same commission rate. Moreover, the channels for securities transactions in such larger firms are very similar.

H3f is also confirmed with a path coefficient of 0.460, which is statistically significant (at 0.025). However, there was no significant evidence of the influence of the various dimensions of customer value on brand loyalty. One reasonable explanation is that not all dimensions of customer value exert a direct influence on brand loyalty. Rather, they might influence it only by affecting customer satisfaction. In other words, customer satisfaction plays a mediating role in the relationship between customer value and brand loyalty.

5. Discussion and implications

Based on the SEM model described in this study, all dimensions of customer value were found to have a significant effect on customer satisfaction, although no significant evidence was found to support the direct influence of any dimensions of customer value on brand loyalty. However, each of the dimensions of customer value were found to exert an indirect influence on brand loyalty through customer satisfaction. The influences of brand loyalty, customer satisfaction, and functional value on customer behaviour-based CRM performance were statistically significant. However, apart from functional value, no evidence was found to support the effect of other

dimensions of customer value on customer behaviour-based CRM performance. This implies that, comparatively speaking, the intangible aspect of CRM performance (relationship quality represented by such sub-constructs as customer satisfaction and brand loyalty) outperformed the dimensions of customer value in influencing the tangible aspect of CRM performance (customer behaviour-based CRM performance). This might be due to the fact that customers in China are becoming more mature and thus prefer functional value rather than emotional value, social value, and customer-perceived sacrifice when they make their behavioural decisions.

However, it should be noted that all the customer value dimensions had indirect effects on customer behaviour-based CRM performance. Moreover, the intangible aspect of CRM performance also played a mediating role in the relationship between each dimension of customer value and the tangible aspect of CRM performance – which indicates the significant role of relationship quality as one of the key measures of CRM performance in CRM. As expected, customer-perceived sacrifice, as a key dimension of customer value, did play a significant negative role in the customer-satisfaction programs of firms.

'... The present findings are a first step towards an in-depth understanding of the operationalisation and key dimensions of customer value and their differentiated effects on CRM performance ... researchers will be able to explore other dimensions of customer value and other factors that influence the customer value in different performance measures of CRM...'

These findings have both academic and practical implications. For managers, the implication is that they have to strike a proper balance among different measures of customer-relationship performance. If they expect to improve customer behaviour-based CRM performance, apart from enhancing functional value their first priority must be the intangible aspects of CRM performance (that is, relationship quality) by building strong brand loyalty and improving customer satisfaction. Firms could simultaneously pay more attention to the two dimensions of customer value (functional value and social value) because the former has a significant and direct impact on customer behaviour-based CRM performance, whereas the latter has an important influence on customer satisfaction (which might drive customer behaviour-based CRM performance indirectly but significantly through brand loyalty). However, this

does not mean that other dimensions of customer value can be ignored. All other dimensions can exert a significant indirect effect on customer behaviour-based CRM performance – through customer satisfaction or through brand loyalty.

Although the effect of customer-perceived sacrifice is relatively small in the current Chinese securities market, the situation might be different in other markets, and even in the Chinese securities market, the current situation might not apply in future. With the gradual deregulation of the securities market by the Chinese government after entry to the World Trade Organization, there might well be a change to the regulated commission rate, thus allowing for greater competition. In addition, the innovative channel transactions might decrease the delivery cost of services by firms in this market. Changes of this nature are likely to increase the influence of customer perceived sacrifices. Firms will thus have to be more careful about the changing role of customer perceived sacrifices in CRM performance if they expect to compete successfully and achieve sustainable competitive advantages by creating and delivering superior customer value in China's market. With the rapid development of China's economy, identifying the key dimensions of customer value and understanding their differentiated effects on customer relationship performance by taking a disaggregated approach will become a priority for all firms aiming at sustainable competitive advantage. For foreign firms that attempt to enter the China market, this study provides much needed evidence of how Chinese firms compete in a transitional economy.

For researchers, the present findings are a first step towards an in-depth understanding of the operationalisation and key dimensions of customer value and their differentiated effects on CRM performance. It is true that superior customer value is very important for the successful competition of firms in customer-centred era, which has been explored and examined conceptually and empirically by many studies. However, which dimensions or elements customers value most and on which performance measures of CRM firms should focus are unsolved questions that are in urgent need to be explored. Furthermore, little is known about what is the differentiated role of each dimensions of customer value in influencing different measures of customer relationship performance and which dimensions of customer value contribute the most to the specific dimension of CRM performance. Therefore, on the basis of the present findings, researchers will be able to explore other dimensions of customer value and other factors

that influence the customer value in different performance measures of CRM.

These results need to be interpreted within the limitations of the study since it is only recently that the understanding of the operationalization and key dimensions of customer value and their impacts on CRM performance became the priority of both managers and researchers. A potential limitation of this study was the problem of common method variance – because all of the endogenous and exogenous variables were collected from the same respondents. Although this method of data collection is commonly used in most related studies, Harman's (1967) one-factor test was used in this study. This test involves entering all the independent and dependent variables into a factor analysis. Common method variance is a substantial problem if a single factor emerges or if one general factor accounts for a disproportionately large variance. The result of this test showed that seven factors explained 86 per cent of the variance, with no single factor explaining more than 20 per cent of the variance. This implies that the problem of common method variance did not appear to be a significant problem.

'... This is a small, preliminary attempt to study a large and complex issue, albeit one in which we have provided a tested theoretical framework ...'

Second, various customer behaviours were integrated into one construct – customer behaviour-based CRM performance. However, some studies have shown that marketing programs can have different effects on different customer behaviours. It would therefore be interesting to conduct further research to examine the differentiated effects of each dimension of customer value on different customer behaviours. Furthermore, the relative importance of each dimension of customer value might change over time, because customer satisfaction can also be affected by a firm's capability to meet unknown and known customer demands and expectations, which implies that the continuously changing importance of each dimension of customer value may be due to the fact that the improved customer satisfaction may also play a certain role in affecting the perception process of customer value by customers. A longitudinal study to explore the dynamics of customer value and its relationship with customer satisfaction would therefore be useful. Replicating and extending this study in other regions and countries and other products and services would test the generalisability of the

present findings and would provide a basis for an external validation of the framework developed in this paper. Although the present measurement model shows good reliability and validity, there is still a long way to go in establishing well-developed scales of complex constructs such as customer value and CRM performance. Furthermore, future research is needed to examine cross-cultural differences and cross-industry differences in the dimensions of customer value and their effects on CRM performance so that scholars can more precisely understand the effects of culture and other specific factors on customer value perceptions and the relationship between each dimension of customer value and CRM performance.

Finally, since there are so many other factors that might influence CRM performance besides customer value, it would be useful and practical if they were to be modelled and tested in an integrated framework. In conclusion, we note that this is a small, preliminary attempt to study a large and complex issue, albeit one in which we have provided a tested theoretical framework. Within this framework, moreover, further advances in knowledge can be made by deepening the search for sources of superior customer value and CRM performance, and also by expanding the framework across industries and national boundaries and integrating more important factors influencing CRM performance. We hope this study serves as a foundation for an effort to sharpen the understanding of the connotation and key dimensions of customer value and their influences on CRM performance.

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