
Original Article

Influence of perceptual metrics on customer profitability: The mediating effect of behavioural metrics

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ABSTRACT Accountability of marketing actions is a topic of ongoing interest. In accordance with the growing importance of the subject, a multitude of customer metrics has been developed intended to measure and value marketing investments and link their returns to financial results and performance. Managers widely acknowledge the need for quantitative measures of marketing performance but now face the challenge of deciding which metrics to measure and how to interpret them. One of the main difficulties lies in the interdependencies of metrics. Those interdependencies may lead to serious misinterpretation and have been widely neglected in the existing literature. Therefore, this study empirically tests if the influence of customer perceptual metrics (for example, customer satisfaction) on customer profitability persists when customer behavioural metrics are considered. We use data from a large European financial service provider. Our findings support the relevance of mediating effects of customer behavioural metrics (for example, cross-selling ratio) on the relationship between customer perceptual metrics and customer profitability. The article contributes significantly to the body of knowledge about interdependencies between different customer metric combinations by considering direct and indirect links, testing for mediator effects, and evaluating their impact on customer profitability.

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INTRODUCTION

Accountability and return on investment with regard to marketing expenditures is a topic of growing debate, and the influence

of marketing within companies has remained a key area of research interest in recent years.¹ It is essential to understand and measure the returns obtained from marketing investments and to account for profitability if one is to ensure a substantial influence of marketing within a firm. Thus, appropriate customer-related metrics are necessary to link marketing investments with financial results and performance. The need to understand the interdependencies among customer-related metrics and their relevance for customer profitability has never been more critical than it is now given the ever-present need for managers to justify their marketing expenditures.² Hence, in recent years, there has been a significant increase in the number of marketing metrics that managers have used to measure marketing effectiveness and develop marketing strategies with the goal of increasing firm performance.³ However, because of the abundance of marketing metrics to choose from (see Farris *et al*⁴ for a detailed list of relevant marketing metrics), the challenge that marketing managers now face is how to determine which metrics are the most important ones to measure: that is, which metrics to select. While there is no single metric that can summarise marketing performance, using too many metrics can simply clutter the marketing metrics dashboard.⁵

Existing research primarily focuses on direct effects and bivariate relationships between customer-related metrics.² Several studies have examined the direct influence of single customer perceptual metrics (for example, customer satisfaction) on customer financial metrics like customer lifetime value or customer profitability (for example, Yu⁶) as well as on overall firm performance (for example, Gruca and Rego⁷). The results indicate a positive influence of customer perceptual metrics on customer financial metrics. Likewise, researchers have investigated the direct influence of single customer behavioural metrics like cross-selling ratio or share of wallet on customer financial metrics

and have confirmed their positive influence (for example, Kamakura *et al*⁸). Gupta and Zeithaml² provide a good overview of bivariate relationships between customer metrics and their direct impact on financial performance.

Owing to the multiplicity of customer metrics, there has been a call for a more comprehensive perspective on customer metrics² and the assessment of their relationships in the customer value chain.^{9–11} To test the influence of a set of customer-related metrics, taking interdependencies into account, is crucial to choosing appropriate metrics that effectively measure profitability and provide a more integrative framework for understanding how customer perceptions are related to behaviours and how these translate into profits. Therefore, for a firm, such testing provides needed guidance about interdependencies among customer metrics.¹² However, empirical research examining the interdependencies of different customer-related metrics is rare, the pattern of relationships among the metrics is not clear, and most studies leave unanswered the question of whether the direct impact of customer perceptual metrics on customer financial metrics persists when customer behavioural metrics are integrated. For example, many studies investigate the impact of satisfaction on share of wallet, while others examine the effect of satisfaction on customer performance, but most do not consider if these effects still hold when share of wallet is included in the customer value chain (the exception is Keiningham *et al*⁹). To neglect indirect effects that probably mediate the influence of perceptual metrics on financial performance or to neglect metrics in such a customer value chain framework may lead to misinterpretation: that is, to the overestimation or underestimation of the relevance of certain metrics and their interdependencies. For example, it is crucial when evaluating the impact of different customer-related metrics on customer profitability to consider if the effect size of

perceptual metrics persists when behavioural metrics are included. Thus, Gupta and Zeithaml² call for studies that also take indirect effects into account because those studies can help us to understand how metrics are related, and which metrics mediate others. We posit direct and indirect effects of the customer value chain in Figure 1 as a framework relating customer perceptual and behavioural metrics to customer profitability.

The objective of this article is to examine the influence of perceptual metrics on financial metrics when behavioural metrics are taken into account. Thereby, this article evaluates the relationship between different customer metrics and investigates their relevance for customer profitability. We address the question of whether the influences of perceptual metrics on financial metrics remain when behavioural metrics are included. Thus, we contribute to the current body of knowledge on the subject by considering mediator effects using surveys as well as internal transaction data at the individual customer level gathered from a leading European retail bank.

The remainder of this article is organized as follows. First, we review the literature regarding investigated relationships between customer metrics. Based on these findings, we indicate our research design. We then introduce the data from our empirical study to empirically examine the metrics' impact within these relationships. Finally, we discuss our results and close the article with various concluding remarks, including thoughts on managerial implications.

CONCEPTUAL FRAMEWORK

Our framework (see Figure 1) draws on the rich theoretical foundation of previous

research regarding single relationships between perceptual and behavioural metrics (see, for example, Gupta and Zeithaml²). Both perceptual and behavioural metrics are supposed to have an influence on customer profitability.

Perceptual metrics include customer attitudes, perceptions, and intentions and have been studied extensively for many reasons. First, the relevant information can be collected through surveys and thus is relatively easy to obtain and share but also quite costly to collect. Second, using these metrics allows firms to diagnose preference and perception drivers that can then be addressed by specific marketing strategies within a firm. Third, perceptual metrics like customer satisfaction help firms to track performance over time or compare firm performance against that of competitors.

Among other perceptual metrics, the present literature has highlighted the importance of *customer satisfaction*, customers' recommendation intentions and customer loyalty (for example, Gruca and Rego⁷; Reichheld¹³; Storbacka *et al*¹⁴). Customer satisfaction has been the most widely studied concept because it can be universally gauged for all products and services, is easy for the respondents to understand and is easy to communicate to managers.² Moving beyond the transaction-based view, studies such as that by Anderson and colleagues¹⁵ reflect a more global perspective and paint satisfaction as an 'overall evaluation based on the total purchase and consumption experience with a good or service over time' (as in the American Customer Satisfaction Index). At that time, a growing body of research linked customer satisfaction to accounting-based measures of financial performance (for example, Anderson *et al*¹⁵; Ittner and Larcker¹⁰).

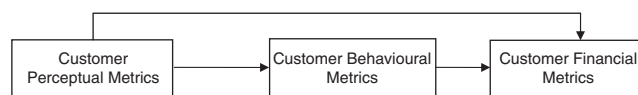


Figure 1: Framework of customer value chain (adapted from Gupta and Zeithaml²).

Numerous studies analyse the importance of customer satisfaction for firm performance (for example, Gruca and Rego⁷) and customer relationship management (for example, Keiningham *et al*⁹).

Recent studies also take competitive aspects into account and show the value of *competitive advantage* for firm performance.^{16,17} Competitive advantage refers to customer perceptions regarding the extent to which viable competing alternatives are available in the marketplace.¹⁸ Ping¹⁹ shows that a lack of viable alternatives in the marketplace should increase customer reliance on a provider. In this vein, Newbert¹⁷ confirms that a firm's competitive advantage contributes to its performance. Zhou *et al*²⁰ demonstrate that a firm's perceived competitive advantage is positively related to its market and financial performance.

Rather than focusing solely on those more 'backward-looking' metrics, the relationship marketing literature has also emphasized the relevance of customers' *affective commitment* as a more 'forward-looking' metric.²¹ Affective commitment can be described as a customer's affinity for a firm; it is one major aspect of customers' cognition and awareness and may also serve as a proxy for brand equity.^{22,23} De Wulf *et al*²⁴ find a positive relationship between customer commitment and purchase intentions. Verhoef²⁵ shows that greater customer commitment causes a greater likelihood to cross-buy. The results published by Verhoef²⁶ indicate that commitment leads to an increase in customer retention and customer relationship development. In contrast, Gustafsson *et al*²¹ find that affective commitment does not predict customer retention, one component of customer lifetime value. Overall, previous studies support a positive effect of customers' affective commitment on customer profitability (for example, Babakus *et al*²⁷).

Another perceptual metric that is currently popular is customers' *recommendation intention* (Net Promoter Score¹³). Reichheld¹³ argues that of all of the commonly used loyalty

metrics, recommendation intention is by far the best at predicting customers' actual loyalty behaviour. He bases his assertion on the fact that when customers act as references, they do more than indicate that they have received good economic value from a firm; they put their own reputations on the line, and they will risk their reputations only if they feel intense loyalty. Several studies investigate the effect of customers' recommendation intentions on firm performance and find that it is an important driver of the firm's future sales and financial performance (for example, Kamakura *et al*¹²; Keiningham *et al*²⁸). Morgan and Rego,²⁹ however, find that the number of recommendations has a generally weaker predictive power than do satisfaction metrics for firm performance.

In contrast to perceptual metrics, behavioural metrics rely on observable customer behaviour. In past decades, firms began to question whether the relation between perceptual and financial metrics was sufficiently strong to justify its use as the primary predictor.³ Thus, as database management and customer relationship management have evolved, researchers and firms have aimed more and more to directly link firm actions to customer behaviour.

As behavioural metrics, cross-selling ratio and share of wallet are widely used.^{8,30–32} Relationship development efforts aim to increase the depth and breadth of relationships.^{33,34} *Cross-selling ratio*, a measure for the breadth of customer relationships, reflects the number of services from the same provider that the customer uses.^{35,36} Cross-selling ratio is easy to obtain from a firm's own database and is simple to interpret and communicate. It has emerged as one of the most commonly applied metrics in customer relationship management and is one of the main customer relationship metrics for ongoing relationships with existing customers.³⁷ Improving the cross-selling ratio is widely seen as an effective means of enhancing customer profitability^{8,31} and

as an important driver of customer lifetime value.^{38,39}

From a firm perspective, a customer's *share of wallet*, the percentage of a customer's business that is done with the firm, is generally unobservable and needs to be determined through surveys. It is neither easy to obtain nor simple to monitor but is costly to collect and update. Nevertheless, share of wallet has recently received significant attention because it explicitly considers the firm's competitors.³ Share of wallet also allows a more outward view of customer relationship management and provides information about customers' future potential. Hence, it can be used for customer segmentation and targeting.^{40,41} Previous research shows a positive impact of share of wallet on customer profitability (for example, Garland⁴²).

Recent literature has focused on single relationships, studies that investigate the relationships between the different metrics and their interdependencies are rare (exceptions are Keiningham *et al*⁹ and Larivière⁴³). Keiningham *et al*⁹ investigate the share of wallet's mediating role in the relationship between customer satisfaction and customer revenues, and their findings do indicate a mediating role in that relationship. Larivière⁴³ studies the influence of perceptual on behavioural metrics and the effect of behavioural metrics on profitability, but does not test for indirect effects. The question of the impact of mediating relationships remains unanswered. Ignoring interdependencies may lead to misinterpretation regarding the

relevance of the investigated metric and can cause overestimation or underestimation of one metric's influence on another. Neglected questions include to what extent the effect size of perceptual metrics is eliminated by including behavioural metrics and which metrics are substituted for by others. Thus, our study focuses on the interaction between these metrics and their mediating relationships.

Based on the conceptual framework in Figure 1, we compose our research model to include the direct and indirect effects of four perceptual metrics (customer satisfaction, customer recommendation intention, the customer's affective commitment and firm's competitive advantage) as well as the direct effects of two behavioural metrics (share of wallet and cross-selling ratio) on customer profitability as presented in Figure 2.

EMPIRICAL STUDY

Data

To analyse our specified research framework, we use a model including the different customer metrics and several control variables. We use the data on a large European financial services provider from two data sources: (i) a data warehouse that stores the bank customers' transactions and profiles and (ii) the results of a customer survey that gathered perceptual metrics and control variables. The combination of internal bank transaction data and customer survey data accounts for the usual phenomenon of common method bias. Our internal customer

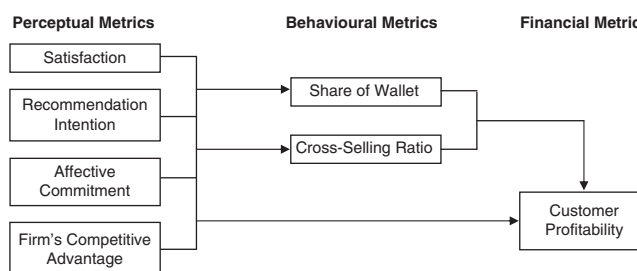


Figure 2: Research model.

data set consists of about 1 335 000 customers, but only 644 of these customers participated in the survey in the spring of 2007. From that pool of surveys, we were obliged to subtract any questionnaires that contained missing values. The analysis demonstrates that the observed behaviour of the respondents is representative of the actual behaviour of the entire customer database. Moreover, there are no significant differences between the customer characteristic variables for the survey sample and those for the entire customer base. The median respondent size of wallet is 10 000 EUR, the median relationship length is 7.8 years (lower quartile 2.5 years, upper quartile 21.4 years), and the median household net income is in the range of 2500 to 3000 EUR. An average of three people live in every household, and the median age of the bank's customers is 43 years old.

In the following, we describe the variables that we use for our analysis. We use customer satisfaction, customer recommendation intention, customers' affective commitment and firm competitive advantage in addition to customer share of wallet and cross-selling ratio. Customer profitability is our dependent financial metric. Based on Gupta *et al.*,⁴⁴ Srinivasan and Hanssens,⁴⁵ it appears appropriate to use customer profitability as a proxy for customers' financial value at the individual level. Customer profitability is measured as an individual, annualised value, depending on the margins of the different products of each customer. Furthermore, we include a set of control variables (size of wallet, household net income, household size, gender, length of relationship and age). All variables under investigation in this study are summarised in Table 1, which includes their operationalisation and descriptive statistics for the variables used in the model.

Model

The analyses are based on the model specified in Figure 2. Hence, we test for a mediator

relationship between the different customer metrics. Following Baron and Kenny,⁴⁶ we use a set of regression equations that we estimate via OLS estimation. To determine the significance of the mediation, we relied on the Sobel⁴⁷ test, which tests the hypothesis that there is no difference between the total effect and the indirect effect of a predictor variable on an outcome variable. We also run the bootstrap test recommended by Zhao *et al.*⁴⁸ and followed their proposed decision tree for establishing mediation.

To test for multicollinearity, we also check the correlations and the Variance Inflation Factor (VIF) statistic. We find some significant positive correlations between the above-described perceptual metrics. Nevertheless, the values for the VIF statistics are no higher than 1.2. The problem of multicollinearity in our model is therefore not evident. The results are available from the authors on request.

Results of empirical study

The direct effects of customer perceptual metrics and behavioural metrics (cross-selling ratio and share of wallet) are given in Tables 2 and 3. Table 2 shows the standardised betas and significance levels of all customer perceptual metrics for cross-selling ratio and share of wallet. Customer perceptual metrics are more strongly related to cross-selling ratio than to share of wallet, as all perceptual metrics are significantly related to cross-selling. Affective commitment is the perceptual metric most strongly related to cross-selling ratio. Satisfaction is the only perceptual metric that is significantly related to share of wallet. Hence, the cross-selling ratio seems to reflect the stated preferences indicated by perceptual metrics better than share of wallet does. However, the adjusted R^2 is higher for the share of wallet equations; that is, the control variables are strongly related to share of wallet. Interestingly, both length of relationship and size of wallet have a negative impact on share of wallet. The negative effect signs indicate that longer

Table 1: Variables under investigation

<i>Variable</i>	<i>Operationalisation</i>	<i>Source^a</i>	<i>Mean</i>	<i>Standard deviation</i>
Customer profitability	Each customer's yearly contribution, depending on the margins of the different products of each customer in EUR ^b	Internal	3373.92	5705.88
Share of wallet	Share of customer's financial 'assets' (except for checking and retirement accounts and cash value of life insurance) invested with our bank (in %)	Survey/internal	32.78	38.73
Cross-selling ratio	Number of products used by the customer	Internal	1.73	1.11
Firm competitive advantage	'How large is the advantage of having a business relationship with ... [the bank] as opposed to a relationship with others?' Responses on a scale from 'huge' (5) to 'no advantage at all' (1)	Survey	3.03	1.29
Customer recommendation intention	'Would you recommend ... [your bank]?' Responses on a scale from 'certain' (5) to 'definitely not' (1)	Survey	2.31	1.24
Customer satisfaction	'Overall, how satisfied are you with ... [your bank]?' Responses on a scale from 'completely satisfied' (5) to 'very dissatisfied' (1)	Survey	2.68	1.10
Customer's affective commitment	'What do you think about [bank]?' Responses on a scale from 'It's the one and only bank' (5) to 'It's not considered at all' (1)	Survey	2.65	1.43
Size of wallet	Customer's total assets in Euros	Survey	27 415.91	72 458.04
Household net income	Categorical variable from 1 (<1000 € per month) to 9 (>=6000€ per month)	Survey	4.83	2.55
Household size	Number of persons	Survey	2.90	1.37
Gender	Dummy variable with 'male' as basis category	Survey	0.48	0.50
Length of relationship	In months	Internal	157.07	189.81
Age	In years	Internal	41.81	12.72

^aInternal: internal bank data.

^bThe variable accounts for variable costs of each product, but does not consider fixed costs.

Table 2: Influence of perceptual metrics on cross-selling ratio and share of wallet

	<i>Cross-selling ratio</i>				<i>Share of wallet</i>			
Advantage	0.17***	—	—	—	0.03	—	—	—
Recommendation	—	0.16***	—	—	—	0.02	—	—
Satisfaction	—	—	0.12***	—	—	—	0.08*	—
Affective commitment	—	—	—	0.20***	—	—	—	0.08
Size of wallet	−0.02	−0.02	−0.02	−0.02	−0.17***	−0.17***	−0.17***	−0.17***
Household net income	0.04	0.05	−0.04	0.04	−0.09*	−0.08*	−0.08*	−0.09*
Household size	−0.10**	−0.11**	−0.11**	−0.12***	−0.10*	−0.10*	−0.10*	−0.10**
Gender	0.03	0.04	0.04	0.03	0.13***	0.14***	0.13***	0.13***
Length of relationship	0.13***	0.14***	0.13***	0.14***	−0.13***	−0.13***	−0.13***	−0.12**
Age	0.00	−0.01	−0.01	0.00	−0.03	−0.03	−0.03	−0.03
Adj. <i>R</i> ²	0.045	0.043	0.030	0.056	0.089	0.089	0.094	0.094
<i>N</i>	570	570	570	570	424	424	424	424

Standardised betas are given; ****P*<0.01, ***P*<0.05, **P*≤0.1.

Table 3: Influence of perceptual metrics on profitability and influence of behavioural metrics on profitability

	<i>Customer profitability</i>				<i>Customer profitability</i>	
Share of wallet	—	—	—	—	—	0.35***
Cross-selling ratio	—	—	—	—	0.36***	—
Advantage	0.18***	—	—	—	—	—
Recommendation	—	0.20***	—	—	—	—
Satisfaction	—	—	0.20***	—	—	—
Affective commitment	—	—	—	0.31***	—	—
Size of wallet	—	0.07*	0.07	0.07*	0.08*	0.17***
Household net income	0.07	0.08*	0.07	0.06	0.06	0.06
Household size	0.02	0.02	0.02	0.01	0.06	0.03
Gender	−0.08*	−0.07*	−0.07*	−0.09**	−0.08**	−0.10**
Length of relationship	−0.03	−0.03	−0.04	−0.02	−0.08**	0.02
Age	0.08*	0.06	0.08*	0.08*	0.07	0.05
Adj. R^2	0.045	0.053	0.052	0.11	0.139	0.116
N	554	554	554	554	554	554

Standardised betas are given; *** $P < 0.01$, ** $P < 0.05$, * $P \leq 0.1$.

relationships are not necessarily associated with larger share of wallet and that very wealthy customers tend to balance their investment assets across firms. These customers might represent significant opportunities for the firm. The firm may aim to motivate the wealthy customers to migrate the assets they have with competing firms to the firm's accounts or strategic partners.

Table 3 reveals the results for the importance of customer perceptual metrics and behavioural metrics for customer profitability. Our results confirm the previous findings; the perceptual metrics and both behavioural metrics have a positive impact on customer profitability. Compared to an adjusted R -square of 0.015 only taking the effect of the control variables into account, perceptual and behavioural metrics have a significant influence on customer profitability. Customer behavioural metrics have a stronger impact on customer profitability than do any customer perceptual metrics. This outcome seems reasonable given that behavioural metrics reflect actual behaviour, which should be more closely related to profitability than customers' perceptions. More interestingly, in terms of effect size and change in adjusted R -square values, customers' affective commitment has a stronger effect ($\beta = 0.31$, $P < 0.01$) than any

of the other perceptual metrics and seems to be a broader perceptual metric. This result is also supported when one includes all perceptual metrics in one regression equation. Regarding behavioural metrics, we can also note that the cross-selling ratio has a marginally higher effect size ($\beta = 0.36$, $P < 0.01$) than share of wallet ($\beta = 0.35$, $P < 0.019$). However, the difference between the two parameters is not significant. But it seems that cross-selling ratio performs better than share of wallet because it reflects customers' perceptions better than share of wallet does.

Table 4 shows the results concerning the indirect effects of behavioural metrics. Customer affective commitment exceeds all other perceptual metrics in combination with both cross-selling ratio ($\beta = 0.24$, $P < 0.01$) and share of wallet ($\beta = 0.32$, $P < 0.01$); it has the strongest influence on customer profitability. Owing to the assumed mediating effect of the cross-selling ratio, the combination of affective commitment and share of wallet is more strongly predictive than any cross-selling ratio combination.

The coefficients indicate that for all four combinations of share of wallet with a perceptual metric (with the exception of customer satisfaction) there is no loss in the

Table 4: Influence of perceptual metrics and cross-selling ratio on profitability and influence of perceptual metrics and share of wallet on profitability

	Customer profitability				Customer profitability			
Share of wallet	—	—	—	—	0.34***	0.34***	0.33***	0.32***
Cross-selling ratio	0.34***	0.33***	0.34***	0.31***	—	—	—	—
Advantage	0.12***	—	—	—	0.20***	—	—	—
Recommendation	—	0.15***	—	—	—	0.20***	—	—
Satisfaction	—	—	0.16***	—	—	—	0.17***	—
Affective commitment	—	—	—	0.24***	—	—	—	0.32***
Size of wallet	0.08*	0.08*	0.07*	0.08**	0.16***	0.18***	0.17***	0.18***
Household net income	0.06	0.07	0.06	0.06	0.07	0.08	0.07	0.06
Household size	0.06	0.06	0.06	0.05	0.03	0.03	0.03	0.02
Gender	−0.09**	−0.08**	−0.08**	−0.09**	−0.12**	−0.11**	−0.11**	−0.13***
Length of relationship	−0.08*	−0.07*	−0.08*	−0.07	0.03	0.03	0.02	0.05
Age	0.08*	0.07	0.08*	0.08*	0.05	0.04	0.05	0.06
Adj. R^2	0.152	0.158	0.162	0.193	0.154	0.153	0.143	0.212
N	554	554	554	554	413	413	413	413

Standardised betas are given; *** $P < 0.01$, ** $P < 0.05$, * $P \leq 0.1$.

magnitude of influence of the perceptual metrics compared to that of their single influence. There is a decrease in the magnitude of influence of satisfaction ($\beta = 0.20$, $P < 0.01$ to $\beta = 0.17$, $P < 0.01$) but an increase in the magnitude of influence of advantage ($\beta = 0.18$, $P < 0.01$ to $\beta = 0.20$, $P < 0.01$) and affective commitment ($\beta = 0.31$, $P < 0.01$ to $\beta = 0.32$, $P < 0.01$); the level of influence of recommendation intentions remains stable ($\beta = 0.20$, $P < 0.01$) on customer profitability. In combination with share of wallet, additional perceptual metrics do not contribute as much to the impact on customer profitability. This finding means that there is a decrease in the influence of each perceptual metric on customer profitability. Customer affective commitment displays the strongest decrease in influence on customer profitability ($\beta = 0.31$, $P < 0.01$ to $\beta = 0.24$, $P < 0.01$). According to our results, it is crucial to consider the interdependencies of perceptual and behavioural metrics and to take indirect effects into account. The reason is that the impact of customer perceptual metrics can be mediated by the indirect effect of customer behavioural metrics.

To test for mediation, we follow Baron and Kenny's test for correlation,⁴⁶ and (following Sobel⁴⁷) provide an approximate significance test of the indirect effect of the

independent variable on the dependent variable via the mediator. Results regarding the bootstrap test recommended by Zhao *et al*⁴⁸ support these findings. We find that cross-selling ratio plays a partially mediating role, and the results of the significance test and the correlations confirm this finding (Figure 3).

Share of wallet is, however, a partial mediator only in the relationship between customer satisfaction and customer profitability (Figure 4), which is in line with the findings of Keiningham *et al*⁹ indicating share of wallet's partial mediating role in the relationship between customer satisfaction and customer revenues.

DISCUSSION

Summary and implications

This study investigates the interdependencies between different customer perceptual and behavioural metrics and their relevance for customer profitability at the individual customer level. Despite the importance of examining mediator effects, research on this topic is rare and has not investigated the relationships among different perceptual and behavioural metrics. The research findings augment current knowledge about these relationships and corresponding direct and

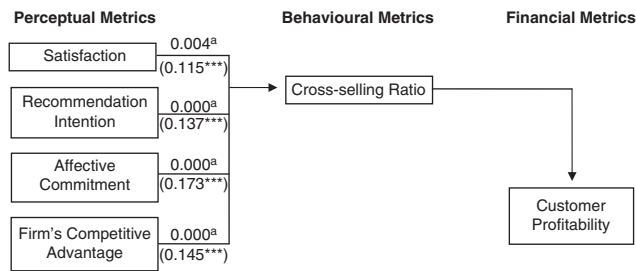


Figure 3: Mediator relationship of the cross-selling ratio.

Note: ^aSobel test of significance of mediation; numbers in brackets indicate the correlation of this relationship and the corresponding significance; *** $P < 0.01$.

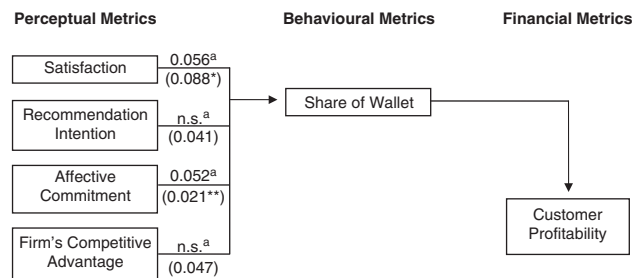


Figure 4: Mediator relationship of share of wallet.

Note: ^aSobel test of significance of mediation; numbers in brackets indicate the correlation of this relationship and the corresponding significance; ** $P < 0.05$, * $P \leq 0.1$, NS, not significant.

indirect effects. The results of our study have several implications for managers.

The outcome enables managers to value different customer-related metrics (customer satisfaction, customer recommendation intentions, customers' affective commitment to the bank, and firm competitive advantage as well as share of wallet and cross-selling ratio) and their interdependencies. Our results show that (i) cross-selling ratio reflects perceptual metrics better than share of wallet, (ii) the influence of behavioural metrics on profitability is stronger than the influence of perceptual metrics, and (iii) customers' affective commitment trumps the effect of customer satisfaction, recommendation intentions, and competitive advantage; it has the strongest influence on customer profitability. This result is surprising because present research focuses on customer satisfaction and recommendation intentions as most important perceptual metrics and

because current studies call for the use of share of wallet as the dominant behavioural metric.

Moreover, the results show that cross-selling is a major contributor to and leading indicator of customer financial performance. While share of wallet has a sizeable impact on customer profitability it is costly to survey. Hence, when only one metric can be measured, firms should focus on behavioural metrics and choose to examine the cross-selling ratio, not only because the relevant data are easy to obtain and update. Because the cross-selling ratio reflects a large part of the explanatory power of customer perceptual metrics, the additional information from one of those other perceptual metrics would be almost redundant.

If more metrics are measured, firms should choose share of wallet in combination with affective commitment because share

of wallet is not a mediator of affective commitment and customer affective commitment seems to be representative of customer mindsets overall. The influence of perceptual metrics still remains when share of wallet is integrated; therefore, when perceptual metrics are to be combined with a behavioural metric, share of wallet should be chosen. The results indicate that customer affective commitment demonstrates the overall influence of customer perceptual metrics and has the strongest overall influence on profitability. As a consequence, when one perceptual metric is to be measured, customer affective commitment is the best representative. However, managers should keep in mind that perceptual metrics as well as data on share of wallet are usually obtained via costly surveys. The findings also suggest that banks should improve their cross-selling activities because the impact on customer profitability is substantial. Furthermore, they should optimise their relationships with customers who spend part of their money with other banks and increase those customers' share of wallet. A simplistic focus on improving customer satisfaction for all customers to increase share of wallet or customer profitability, for example, does not seem to be the best management approach if the aim is to maximise the bank's overall profitability.

For the analysed bank to achieve profitability, it is important not only that it is efficient in achieving affective commitment among customers but also that it is efficient in translating customer perceptions into relevant behaviours.

The findings regarding indirect effects confirm that there exists a mediator relationship between cross-selling ratio and each of the four perceptual metrics as well as between share of wallet and customer satisfaction. The above-mentioned results clearly demonstrate the importance of understanding the relationships between different customer metrics. The findings reveal the essential benefits of investigating

indirect effects; without doing so, one would never be able to reveal the mediating relationships at play.

Limitation and further research

This research has provided us with deeper insights into the indirect effects of different customer metrics, their relationships and their influence on customer profitability. However, a number of limitations remain that may suggest avenues for further research. First, we focus on a single industry and one firm, which inherently limits our ability to extend the findings of this research to other industries. There is an opportunity to conduct the same sort of evaluation in a similar setting in other industries to determine whether the results obtained are stable across industries. Second, we examine one specific dependent variable (customer profitability); we cannot confirm that our findings hold for other dependent variables as well. This limitation suggests opportunities for studies that focus on other customer financial metrics. Third, we are aware that there are numerous perceptual and behavioural metrics to be studied, and we do not claim that the customer metrics investigated are the only ones that influence customer profitability. Further research investigating additional customer-related metrics would obviously help to generalise our results, indicating further independent variables and clarifying the robustness of these findings in other settings.

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