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Customer perception measures driving financial performance: theoretical and empirical work for a large decentralized banking group

Jan Eklof, Katerina Hellstrom, Aleksandra Malova, Johan Parmler and Olga Podkorytova

Summary

Purpose – The purpose of this paper is to assess the usefulness and efficiency of customer-based measures such as customer satisfaction (CSI) and perceived loyalty for monitoring and enhancing the financial performance in corporations.

Design/methodology/approach – General financial data for the empirical modeling is compiled from national and international databases (Alla Bolag, IMF/IFS, Bloomberg, Eurostat, etc.) and company-specific data from the studied corporation. Customer perception data (like CSI and loyalty) are taken from the Extended Performance Satisfaction Index-initiative database (annual observations for the period 2001–2014 and quarterly for 2008–2014). A hierarchy of structural models is devised on a combined time-series and cross-section (panel and multi-level) approach. The results are based on models estimated by Arellano–Bond procedures (Arellano and Bond, 1991).

Findings – The core findings are two. First, there is a strong positive relationship between customer-based measures and financial performance. Second, it is effective to regularly monitor CSI as a forward-looking indicator for understanding future financial performance.

Practical implications – Customer-based measures are highly useful as leading indicators of companies' future performance and should be incorporated even more into corporate decisions.

Originality/value – According to this survey of contemporary research, very little is academically documented for the full-circle from corporate to branch level. Thus, the prevailing study should be of potential value for companies in general.

Keywords Customer satisfaction, Decentralized management, Non-financial performance monitoring, Service metrics

Paper type Research paper

Introduction

The purpose of the studies reported in this paper is to assess the usefulness and efficiency of customer perception measures for budgeting, monitoring and enhancing the financial performance in corporations. We provide evidence of the leading role of customer satisfaction (CSI) and loyalty for financial performance of, first, Swedish companies across industries, second, companies within Nordic financial sector and, third, within an international banking group. In a case study, we further provide insights into the ways how CSI index and perceived loyalty may be enhanced *per se* on different levels of this large financial organization.

The report constitutes an integral part of a research program at Stockholm School of Economics (Adolphson *et al.*, 2012). The program is focused on assessing the importance of intangible performance indicators as drivers of the financial performance of entities

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(companies, organizations). In our study, we acknowledge the potential value of CSI as well as (perceived) loyalty as a driver of the financial performance. More specifically, we analyze whether it is possible to base a decentralized planning and monitoring structure on customer-related key performance indicators to achieve good overall performance for the company/group. Possible conflicts between different levels in an organization are briefly touched upon.

Satisfied customers are central to good financial performance and financial returns according to conventional theory (Fornell *et al.*, 2006; Aksoy *et al.*, 2008; Ittner *et al.*, 2009). In many places in the world, business organizations have been elevating the role of the customer to that of a key stakeholder over the past decades. Customers are viewed as a group whose satisfaction with the enterprise must be incorporated in strategic planning efforts. Forward-looking companies are finding value in directly measuring and tracking CSI as an important strategic success factor. Evidence is mounting that placing a high priority on CSI is critical to improved organizational performance in a global marketplace.

With better understanding of customers' perceptions, companies can determine the actions required to meet the customers' needs. They can identify own strengths and weaknesses, where they stand in comparison to their competitors, as well as chart out future progress and improvement paths. CSI measurement helps to promote an increased focus on customer outcomes and stimulate improvements in the work practices and processes used within the company.

The link between CSI and financial performance has been analyzed by many authors. Most evidence can be found on industry level, whereas the research on company level or business unit level is limited (Ittner and Larcker, 1998; Banker *et al.*, 2000; Livne *et al.*, 2011).

The paper is structured as follows. First, we describe research design and discuss financial and non-financial performance measures. Second, we elaborate research questions in detail and provide hypotheses. Third, we report the results of the individual studies. Finally, we provide some insights into how regular monitoring performance assessment systems should be set up to improve the performance of an organization.

Research basis design

The assumption is that it is possible to explain the (financial) performance of an organization by means of a (limited) set of driving variables. This is based on an assessment of traditionally used explanatory models (Adolphson *et al.*, 2012) utilizing financial/accounting information combined with non-financial variables. The following general model realization is used as starting point:

$$Y_{t,i} = f(Y_{t-k,i}; C_{t-k,i}; A_{t-k,i}; I_{t-k,i}) \quad (1)$$

where

- $Y_{t,i}$ is the financial performance of organization i in period t ;
- $Y_{t-k,i}$ a vector of the financial performance for previous period $t-1$ to $t-k$;
- $C_{t-k,i}$ a vector of control variables for current period as well as lagged relating to organization i , or the market/industry in general;
- $A_{t-k,i}$ a vector of tangible (accounting/financial) variables relating to organization i ;
and
- $I_{t-k,i}$ a vector of intangible variables relating to organization i (basically relating to stakeholder valuation, customer, associates, etc.).

Our approach uses combined cross-section and time-series observations in the form of panels of units for the organizations included in the analysis. The functional form of the models developed and tested varies from study to study based on contemporary theories

(Bernhardt *et al.*, 2000; Cooil *et al.*, 2007). The modeling starts with linear relationships where the variables are expressed in either absolute level terms or (relative) differences.

The research is strongly empirically based. Data are collected from a variety of sources and focus is on “operational” measures that are usually highlighted as key performance indicators, KPIs (Kaplan and Norton, 1996, Ittner *et al.*, 1997). The KPIs, in particular for financial performance, vary from study to study depending on the specifics of the particular industry and on the aggregation level. This is further discussed below.

Financial performance

The dependent variable (set of variables) is an indicator of financial performance for capturing how well the entity/company/organization performs. This may be measured in different ways depending on what industries and/or entities are studied. In the overall project (Y_{it}), the following alternatives have been used (for detailed explanations see the respective parts of the project).

Market-related measures such as market capitalization, Tobin's Q and stock returns are used for publicly traded companies. For other companies, only accounting-based measures are used – profit margin, return on assets, return in operating net assets, return on equity. For the financial sector, we use bank-specific performance measures such as total costs as fraction of total revenues (O/I) and costs after financial adjustments (like credit losses and recoveries) as fraction of total revenue (C/I).

Control variables

The performance of an organization depends on company specific factors as well as external variables. Among the external variables, we test for general economic performance (GDP) that indicates business cycle fluctuation for industry specifics (dummy approach capturing possible specific industry effects) and industry general performance indicator (share index, etc.). Company-specific factors which influence company's financial performance are past performance of the company (lagged profits), financial leverage and growth of the company.

Non-financial explanatory variables (intangibles)

The non-financial variables which are in focus in our study are taken from the Extended Performance Satisfaction Index-initiative (EPSI-initiative) (EPSI, 2011, 2012). EPSI Rating is a system to collect, analyze and disseminate information about image, preferences and perceived quality as well as loyalty of customers, employees and other stakeholders to commercial entities, governmental bodies and other organizations (EPSI, 2011, 2012). The EPSI approach focuses on causal analysis derived from structural model elaboration and thorough empirical studies to estimate numerical relationships. A large set of international benchmark databases has been developed since 1999 when the initiative started in a small number of countries.

The (intangible) domains included are given in [Figure 1](#), whereas the special model devised for external CSI (considered in the present study) is introduced in [Figure 2](#).

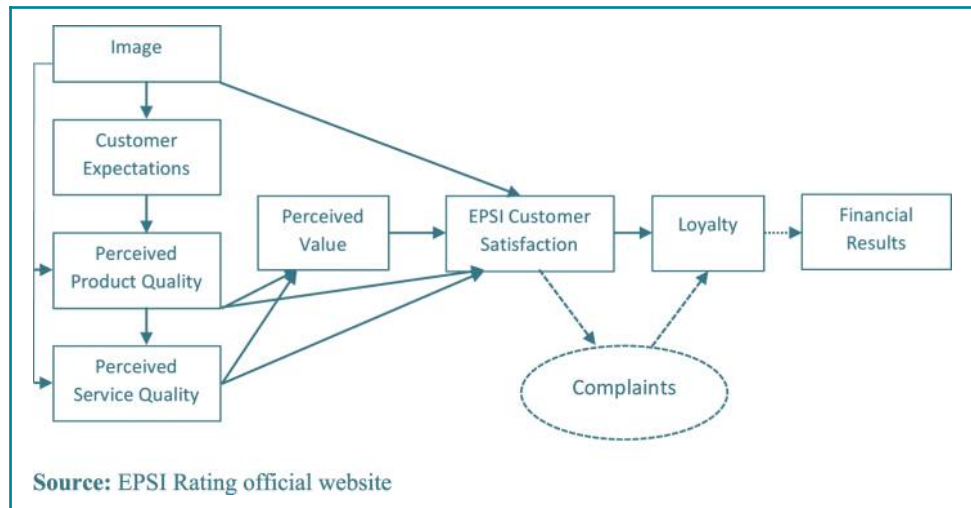
The EPSI Rating framework is a structural equation model where each of the latent variables is operationalized by a set of measurement variables. The model is estimated using partial least squares.

Data on external customer perceptions are available from 1996 on annual basis for about 30 industries in Sweden. The number of additional countries included in EPSI is successively increased and amounts now to about 25. In total, about one million interviews are conducted per year. The great majority of interviews conducted with final consumers (B2C) and corporate customers (B2B) are gathered through telephone interviews (CATI).

Figure 1 Intangible domains studied with EPSI



Figure 2 The EPSI Rating customer structural model



The utilized standard questionnaire uses the scale 1-10 for measuring the manifests (the higher score, the more satisfied is the respondent).

The latent aspect customer satisfaction (EPSI) is estimated through structural equation modeling based on the following three manifest questions:

- Q1. How satisfied are you overall with your bank?
- Q2. How satisfied are you with your bank in relation to your expectations?
- Q3. How satisfied are you with your bank in relation to an ideal provider?

The results by latent aspect (like EPSI) are reported on the scale 0-100 when estimated through the structural equation model. For more background information about EPSI and the adopted estimation technique, see [EPSI \(2011\)](#).

Research questions and hypotheses

The main hypothesis to be tested concerns the relationship between CSI and financial performance. This is done to consider whether the intangible KPIs may be used in a multi-level priority setting process. Hence, the following questions will be addressed:

- RQ1. Can we determine a link between non-financial KPIs (as discussed above) and the financial performance of an economic activity? First, we study the association within eight different industries in Sweden. In the second step, we study the association in the financial sector in Sweden and other Nordic countries. Finally,

we study the association within an international banking group on different aggregation levels.

RQ2. Can possible relationships identified in *RQ1* be used for monitoring and policy analysis of different aggregation levels? And if so, how can a feasible process be devised?

From the above two research queries, a number of more specific hypotheses are spelled out as follows:

- H1A*. There is a positive relationship between CSI and customer loyalty and financial performance on company level for major Swedish industries.
- H1B*. The magnitude of the relationship between CSI and customer loyalty and financial performance differs from industry to industry in the Swedish business sector.
- H1C*. There is a positive relationship between CSI and financial performance on group-level for major European banking groups.
- H1D*. There is a positive relationship between CSI and financial performance on bank-level for major Swedish banks.
- H1E*. There is a positive relationship between CSI and financial performance on regional and branch level within major Swedish banks.
- H2A*. It is feasible to monitor CSI on regional level for a large Nordic bank to enhance the corporate financial performance.
- H2B*. It is feasible to monitor CSI on branch level for a large Nordic bank to enhance the corporate financial performance.

Design and data

The hypotheses in *RQ1* are tested based on empirical analysis of data for Swedish, Nordic and North European banks in particular and for companies in other main industries in Sweden in general. *RQ2* is analyzed in a case study. The data sets used in the different models adopted are briefly commented upon below.

Based on the focused theoretical assessment, a hierarchy of structural models are devised on a combined time-series and cross-section (panel and multi-level) approach. General financial data for the empirical modelling is compiled from national and international databases (Alla Bolag, IMF/IFS, Bloomberg, Eurostat, etc.) (*RQ1*) and company-specific data from the studied corporation (*RQ2*). Customer perception data (CSI index and loyalty) are taken from the EPSI-initiative database Annual observations for the period 2001-2014 and quarterly for Q1 2008-Q3 2014. We use a number of different multi-level algorithms in Stata14. The finally communicated and implemented results are based on models estimated by Arellano–Bond procedures (Bruno, 2005; Roodman, 2006).

Results *RQ1* – relationship between customer base measures and financial performance

Modelling and results for testing of *H1A* and *H1B*

Previous studies testing relationship between customer-related measures and financial performance of the firm are almost exclusively done within one industry. This makes them less comparable, as the customer-related measures are constructed in different, usually industry-specific ways. In our study (Hellström *et al.*, 2016), we have one customer-related construct for all industries and thus argue that we can get comparable results across the industries. We test the relationship between CSI and perceived customer loyalty (lagged one year) and firm's operating profitability (measured as return on operating net assets) for a sample of 77 Swedish companies in 8 different industries between 2002 and 2014. We have totally 415 firm-year observations which have on average 16.6 per cent in return on

operating net assets, annual growth of 4.9 per cent and equity ratio of 37 per cent. The average CSI is 67 and perceived customer loyalty is 70 points (on the same scale).

We find a positive relationship between both lagged CSI and customer loyalty and return on operating net assets. We also find that the importance of customer-related measures is industry specific. Energy companies, information and communication technology companies, personal transport and fitness companies show a significant positive relationship, whereas for companies in the staffing industry, logistics, retail and real estate agencies the customer-related measures are insignificant. The result is somewhat weaker for information technology and telecommunications than for energy, transport and fitness. Looking at the coefficients slopes, fitness companies have the highest slope coefficient (0.813 respectively 0.610), whereas the other industries have somewhat lower slope coefficients.

We have further looked into changes over time, that is whether the importance of customer-related measures have changed over time. We divided the sample into three periods and found that the significance of customer-related measures is strongest for the period of 2007-2010 for staffing industry and energy sector. We interpret the findings as a potential indicator of the importance of these measures during financial crisis (2008-2009). A number of other special divisions of the data-set were also done (Table I).

Thus, both *H1A* and *H1B* are supported by the study on eight different Swedish industries.

Modelling and results for testing of H1C

The full study is based on annual data (time period 2004-2014) for the main banks in following countries: Denmark, Sweden, Finland, Norway, UK, Spain, Czech Republic, Russia and Kazakhstan. The data that describe financial performance of the banks have been collected; five different proxies of financial performance were considered:

1. *Profit margin*: Measuring the company's profitability, this ratio is the comparison of how much of the revenue incurred during the period was retained in income: $(\text{net income} / \text{net revenue}) \times 100$.
2. *Return on assets*: Indicator of how profitable a company is relative to its total assets in percentage. Return on assets gives an idea as to how efficient management is at using its assets to generate earnings. Calculated as: $(\text{trailing 12M net income} / \text{average total assets}) \times 100$.
3. *Return on equity*: Measure of a corporation's profitability by revealing how much profit a company generates with the money shareholders have invested in percentage. Calculated as: $(\text{T12 net income available for common shareholders} / \text{average total common equity}) \times 100$.

Table I Relationship between customer-based measures (customer satisfaction, CSI and perceived loyalty, LOY) over time						
Factor	2002-2007	2008-2009	2010-2014	2002-2007	2008-2009	2010-2014
Constant	-8.221 (0.785)	-135.67*** (0.004)	-6.508 (0.788)	10.649 (0.705)	-79.265** (0.015)	-3.747 (0.823)
CSIt-1	0.169 (0.723)	2.191*** (0.002)	0.210 (0.551)			
LOYt-1				-0.123 (0.768)	1.293*** (0.006)	0.164 (0.485)
RONAt-1	0.778*** (0.000)	0.265*** (0.004)	0.629*** (0.000)	0.792*** (0.000)	0.262*** (0.005)	0.629*** (0.000)
F^2 (%)	49.9	17.0	37.0	49.9	15.2	37.0
N	76	88	251	76	88	251

Note: ***Means 1% significance ($p < 0.01$) and **means 5% significance ($p < 0.05$)
Source: Hellström *et al.* (2016)

4. *Return on stock*: Calculated as (share price (t1) – share price (t0) + dividends per share (t1))/share price (t0).
5. *Tobin's q*: Calculated as = (market capitalization + preferred equity + ST borrowings + LT debt)/total assets.

When the sample was restricted to Scandinavian countries only (2004-2014, four countries, nine banks), the results became significant in terms of supporting a positive relationship from CSI to financial performance as illustrated below (Table II).

We can conclude that 1 per cent growth in CSI index measured with EPSI methodology gives approximately 5.5 per cent growth of bank's profitability measured by different measures. This result is statistically significant and sustainable for Scandinavian countries (Finland, Sweden, Denmark, Norway) for other countries and their banks, there were no significant results obtained. The reason for this is that capital structure and client base of the Scandinavian banks are rather homogenous, in comparison with the structure of UK banks that is very broad world-wide, whereas customers were surveyed only from UK. This fact does not allow us to link CSI of UK citizens and financial performance of UK banks at the whole.

Thus, *H1C* is supported for Nordic banking groups (Scandinavian countries only) but not for other banks in the sample.

Modelling and results for testing H1D

This study (Adolphson *et al.*, 2012) can be seen as a test of previous research (Gruca *et al.*, 2005). It is based on annual data for the main banks operating in Sweden during the period 2000-2014. The data on accounting variables are taken from public databases, whereas the CSI data (especially for service relationship dimensions) are taken from the detailed results database of the EPSI program. The estimated model (final realization) is presented below:

$$MarkCap_t = -249 + 5.48 \cdot EPSL_{t-1} + 3.85 \cdot GDP_t \quad (2)$$

(SE: 2.15) (SE: 2.21)

This is estimated with Arellano–Bond techniques (Arellano and Bond, 1991). No lagged dependent variable is included in the used model. The obtained results point at very strong (and positive) relationships between (changes in) satisfaction as measured by the EPSI approach (disaggregated) and the Market Capitalization (*MarkCap*) of the five studied banks. Also, loyalty is significant in determining *MarkCap*, but less so, and highly collinear to CSI. On average, the results indicate that a change in EPSI-satisfaction with 1 unit will change *MarkCap* by 5.5 billion SEK (€600m) – approximately 5 per cent – after one year.

Table II Results for modelling Nordic banking groups (sample restricted to Scandinavian banks only)

Variables	(1) <i>Inprofmarg</i>	(2) <i>Lnret_equity</i>	(3) <i>Lnret_assets</i>
L. <i>Inprofmarg</i>	0.200 (0.126)		
<i>Incsi</i>	5.540*** (1.836)	5.834*** (1.769)	5.598*** (1.829)
<i>sales3growth</i>	0.0264*** (0.00983)	0.0290*** (0.00946)	0.0328*** (0.00996)
L. <i>Inretequity</i>		0.117 (0.121)	
L. <i>Inret_assets</i>			0.106 (0.121)
<i>Fin_leverage</i>			-0.0698** (0.0299)
Observations	71	71	71
Number of banks	9	9	9
Year dummy	Yes	Yes	Yes
Prob(Sargan)	0.34	0.097	0.32
Prob(AR1)	0.0001	0.002	0.002
Prob(AR2)	0.564	0.0562	0.584

Notes: Standard errors (SE) in parentheses; ****p* < 0.01; ***p* < 0.05

GDP growth is not significant to add explanatory power on the 5 per cent level. None of the above introduced and tested accounting/financial variables has any (significant) explanatory power. One of the five included banks may be interpreted as an outlier in terms of *MarkCap* during the past three years due to external factors. After adjusting for this outlier, the relationship becomes even stronger.

Thus, *H1D* gets support, and it appears that CSI as measured by EPSI has explanatory value for driving financial performance measured by market capitalization.

Modelling and results for testing of H1E

We test this hypothesis within a major Nordic bank (Handelsbanken-SHB) (Adolphson *et al.*, 2012). We base our analysis here on a sample consisting of approximately 980,000 private and corporate banking customers. The data are collected on a quarterly basis started in Quarter 1 in 2008 and end at Quarter 3 in 2014. The financial performance data are collected from the internal bank documents and cover:

- net profit (result);
- total costs divided by total revenues (C/I); and
- operating costs divided by total revenue (O/I).

Two levels of decentralization have been considered: Regional level (6 regions together), where branches are divided into groups by geographic location, and individual branch level with 461 branches in Sweden (Table III).

1. *Initial analysis* indicates that when regional level based on geographic location is used, no significant link between CSI and financial performance can be found. This is most likely a result of the fact that clustering of customers based on geographical location does not take into account differences in customer behavior (there is no strong relationship between customer behavioral aspects and the geographic pooling of clients into regions). Hence, strong heterogeneity is present within each of the different regions (Büschken, 2009). Therefore, results on regional level have been excluded at this stage, and instead, we focus on branch level analyses.
2. *Branch level study*: The following overall regression results (Arellano–Bond estimation) have been obtained.

The coefficients (Coef.) are negative indicating that an increase in satisfaction will improve/reduce the C/I score. The long-run cumulative effect is as high as 5 per cent. Similar results are obtained with results as dependent variables.

Thus, *H1E* is supported by the empirical study when it comes to branch level, whereas no significance is obtained on regional level.

Table III Estimation results: costs divided by total revenues

Factor	Coef	C/I SE	p-value	Factor	Coef	O/I SE	p-value
C/I,L1	−0.37	0.09	0.44	O/I,L1	−0.04	0.01	0.00
EPSI,L1	−0.42	1.00	0.68	EPSI,L1	−0.77	0.08	0.00
EPSI,L2	−1.85	0.86	0.03	EPSI,L2	−0.69	0.35	0.05
EPSI,L3	−1.85	0.60	0.00	EPSI,L3	−1.48	0.37	0.00
EPSI,L4	−2.25	1.03	0.03	EPSI,L4	−1.12	0.13	0.00
GDP	−0.16	0.23	0.48	GDP	0.42	0.56	0.45
Constant	544.38	148.81	0.00	Constant	351.18	15.70	0.00

Results RQ2 – decentralized planning in the studied bank

H2 refer to the feasibility and possibility of regular monitoring a large banking group by decentralized measures, including a focus on CSI. This part is carried out in the form of a case study to a major Nordic bank (Lagerstöm, 2013).

The studied bank (Handelsbanken – SHB) says that their main target is to have a higher average profitability on investments than the mean for the four big banks in Sweden. This is aimed at by focusing on the cost/income ratio (C/I) (keeping it as low as possible). They see CSI index as an important driver for this purpose. The performance in C/I ratio and CSI is monitored quarterly for the entire bank group as well as on regional and branch levels (Lagerstöm, 2013).

On the branch level (in total 461 studied in Sweden), the bank manager is expected to have a discussion with all personnel quarterly for assessing the performance in terms of CSI and financial performance (especially C/I-score). During these meetings, the focus is on how to improve CSI to further enhance the C/I-score. Answers on individual questions in the quarterly EPSI-survey are used to understand what drivers may function as KPIs and how these can be improved.

The financial performance of Handelsbanken has stayed above the industry average throughout the period under study and, especially, remained stable over the business cycle. Thus, *H2B* is supported by our findings and is in line with the results for *H1E*.

The core finding of this study is that it is effective to regularly monitor CSI (measured by EPSI) as a forward- looking indicator for understanding future financial performance (measured the way the studied bank does). The lead time from realized CSI to main effect on financial performance is up to one and a half year. Further on, it is illustrated how operational instruments can be used on different aggregation levels to enhance CSI. This is most efficient on corporate level and for individual branches, whereas the regional level (six regions considered) appears less effective for policy management purposes in this context. Strong heterogeneity within the regions is considered as main cause of this challenge.

The results are sensitive to the choice of customer perception measure. As an example, the often referred to indicator net promoter score does hardly show any significant relationship to financial performance (results available on file, not reported here).

The statistical properties of the model system are very strong and fairly stable over time. On average, an improvement of 1 per cent in CSI will enhance the financial performance (measured as market capitalization) with 5 per cent (within one year). On branch level, an increase of 1 per cent in CSI leads to about 5 per cent of improved cost/income-ratio in a year's time. It should be noted that the results are symmetric and goes also the other way (reduced CSI will generate deteriorated financial performance). This is showed in the hypothesis testing sections above.

Discussion and conclusions

We have focused on one specific multinational company within the financial sector. However, we also report in addition, a number of benchmarks for other financial corporations (26 in total) nationally and internationally, as well as for companies in eight other industries. Here, the full circle analysis from group-level through business units and down to branches is not yet entirely fulfilled. The cause-effect relationship from CSI (and related non-financial indicators) to financial performance is statistically significant in basically all studied industries but varies numerically from one to another, and also over time. More analysis is needed before any solid conclusions for practical applications on company-level may be given for corporations outside the financial sector.

Practical implications

The empirical results point at a very strong relationship between CSI (measured through the EPSI initiative) and financial performance. The approach has already been used for decentralized planning and follow-up in practice during the past few years in the studied bank. According to the top management of the corporation this is found highly useful and should be enhanced even more according to corporate decisions.

Originality/value

Many company and industry studies relate non-financial performance indicators to the financial bottom-line. However, according to our survey of contemporary research very little is academically documented for the full-circle from corporate to branch level. Thus, the prevailing study should be of potential value for many companies, both in the financial sector and other industries (like possibly ICT and Retail).

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