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Value measurement and pricing of product-related services: Initial findings and a hierarchical linear model approach.

Abstract

Given the substantial significance of buying behavior in business-to-business markets, the pricing of product-related services is a worthy subject for research. Several theoretical and empirical papers reveal that pricing is one of the key success factors in determining profit and revenue. However, the pricing management of product-related services is under-researched. Our paper focuses on the ability of sales forces to communicate the value of such services. The initial findings indicate that companies which are able to quantify the value of their services and communicate it appropriately, considerably increase the value of their services as perceived by customers. In the paragraph future research we develop a HLM approach to assess the relationship between value pricing and performance more closely.

Introduction

For manufacturing companies, product-related services offer potential differentiation from competitors, which mostly offer similar products. Empirical studies confirm that companies in plant and machine construction industries, which are able to deliver product-related services successfully, gain turnover that is above the industry-wide average, thus yielding higher profitability (Luczak and Hoeck 2004). Currently, companies are beginning to exploit the benefits of the service business.

The differentiation achieved through product-related services, has a positive impact on suppliers, if the bundle of product and product-related services achieved a greater net-value than the individual product itself (Simon and Damian 1999). This criterion is fulfilled, if the value difference is greater than the markup claimed by the supplier (Belz and Bieger 2004). However, many manufacturing companies which offer these bundles are confronted with a low willingness to pay. Given the substantial significance of buying behavior in the business to business sector, the pricing of product-related services is a worthy subject for research. However, the price management of product-related services is under-researched.

In this context of product-related services, value pricing is of increasing interest to suppliers. Therefore, our paper focuses on the ability of sales forces to measure and communicate the value of such services. Our initial findings indicate that companies which are able to quantify the value of their services and communicate this appropriately, considerably increase the value of their services as perceived by the customer. In order to

bly increase the value of their services as perceived by the customer. In order to increase customer willingness to pay for product-related services, many companies could clarify the added value for their services by using a value pricing approach.

The particular challenge of value pricing for product-related services is that the process relies on appropriate measures of the value. The use of conjoint measurement as a classical method is limited (Woratschek 1996), because of the high number and the intangibility of performance characteristics. Another method is so-called "value-in-use" analysis. With this approach, suppliers attempt to quantify customer value in advance (Monroe 2003). All these methods have the potential to increase the customer value of product-related services. There are several conceptual approaches in literature, but only a few articles discuss the successful implementation in practice (Hinterhuber 2004).

Successful value pricing is based on a fit between the assumptions made by suppliers, which refers to the estimated value of the product-related services and

(1) the real value the customer perceives

(2) the potential for quantifying customer value by means of the appropriate instruments.

In other words: value pricing can only succeed, if the supplier makes the right assumptions about perceived customer value. In addition, the supplier must to quantify this value with the appropriate instruments. Unless these conditions are fulfilled, the pricing process will be incorrect and invalid. Is there a misconception with respect to real customer value, the supplier will over- or underestimate the willingness to pay, by using customer value pricing.

Since the value pricing debate has a long tradition in the area of price management, one might expect that the topic would have attracted attention in practice as well. However, while there is strong theoretical consensus in the literature on the issue, there is a lack of empirical research on value pricing and its impact on performance (Cachon 2003). Against this background, the main objective of this paper is to gain insight into value pricing and its potential effects on performance outcomes.

Analyzing the fit between the assumed perceptions on the part of the supplier with respect to customer value and the value that is actually perceived by the customer is **main focus of this paper.** First of all, we analyze the assumptions suppliers make about customer value (value to customer). In second step, we analyze the extent to which these assumptions influence the implemented pricing approaches, when it comes to salesperson's behavior and the instruments used to quantify the customer value.

This paper is structured as follows. After reviewing the **theoretical background** on value pricing and value measurement, we report the initial empirical findings from our study. Based on these findings, we develop a model, namely a HLM (hierarchical linear model) which is relevant to our future research intentions. In the reminder of the paper, we present our findings and conclude by highlighting the managerial implications, limitations and possible directions for future research.

Theoretical Background:
quantifying value as bases for value pricing

The construct of customer value

Generating customer value is a central aspect of marketing research and a constitutional base of all marketing activities in practice (Holbrook 1994; Woodruff 1997). In marketing literature, customer value is characterized as a major success factor, because it generates advantages in competition and is important for loyalty and customer satisfaction (Woodall 2003; Cooper 2001).

Thus far, the term *customer value* has not been clearly defined in the literature. However, two interpretations dominate the literature. There is a differentiation between customer value as value accruing to the customer (value to the customer) and customer value as that of the customer to the company (value of customer) (Cornelsen 2000; Woodall 2003). This paper focuses on "customer value" in the sense of "value *to* the customer". Customer value is defined as "what they get (benefits) relative to what they give up (costs or sacrifices)" (Zeithaml 1988). Consequently, the customer chooses the offer that creates the highest net-value in comparison to alternative offers (Cornelsen 2000; Gale 1994; Woodall 2003). There are several approaches in the marketing literature with respect to defining and operationalizing this value. Figure 1 categorizes value benefits and costs.
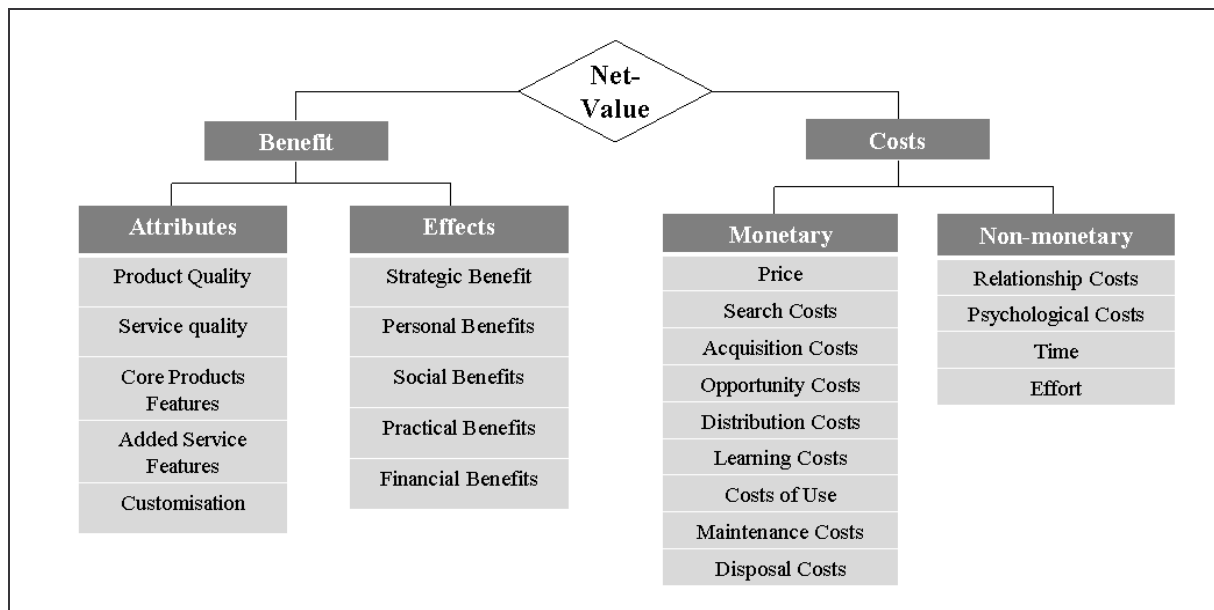
Figure 1: Example of categorizing benefits and costs for customer.

On the one hand, the benefits consist of attributes resulting directly from the offer, e.g. the service quality. On the other hand, they consist of derived benefits to the customer, e.g. financial advantages down the line. "Sacrifices" can be divided into monetary costs such as price, search or maintenance costs and non-monetary "sacrifices" such as time and effort.

Figure 2 shows the operationalisation of customer value with respect to attributes and effects (Wachter 2006). *Lapierre* characterizes the attributes as "first level value", and the effects as "second level value", whereas the "first level value" results from the combination of a tradeoff and benefit and the "second level value" results from making use of the services (Lapierre 1997).

Our preliminary empirical study is based on the value theory of Lapierre. Expert consultations revealed that the financial value is too global, so that we marginally adapted Lapierres' base model. A differentiation was made between efficiency value and effectiveness value. In addition, we took results from various empirical studies of customer value in the business-to-business sector and added relevant value-aspects for product-related services (Beutin 2000). The operationalization is based on scales which have been used successfully in the past (Lapierre 2000; Eggert and Ulaga 2002).
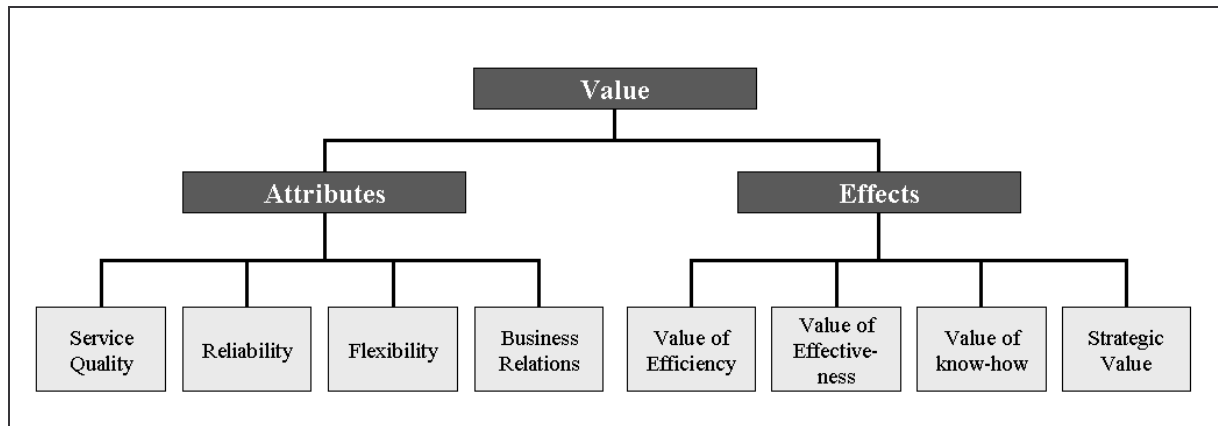
Figure 2: Value-theory as basis of our study.

Value Pricing and product-related services

The idea of value pricing is basically to place less emphasis on competition and costs, and more on the value to customers as the basis for price setting (Brennan et al. 2007; Bliemel and Adolphs 2003; Noble and Gruca 1999; Simon and Dolan 1996; Christopher and Gattorna 2005; Ailawadi et al. 2001). A combination of price setting and customer value characterizes this pricing method (Anderson and Narus 2004; Christopher and Gattorna 2005; Simon 1992; Nagle and Holden 1998).

In the context of value pricing, the value of product-related services can be seen as a bundle of customer-perceived attributes of services, which all have their own value shares. The integration of product-related service and the core product are combined to form the product-service-bundle and generate an additional integration value (Bhardwaj and Hofstede 2006). The entire value is offset against the costs which customers incur by acquiring and using the service. While the customer is concerned with sufficient net-value as buying incentive, the supplier tends to exploit the customer's willingness to pay (Bliemel and Adolphs 2003).

The shift from cost pricing to value pricing relies on certain specific conditions. Industry-wide delivery bottlenecks and the lock-in strategies aimed at fostering loyalty make it possible for suppliers to establish a safe customer value pricing policy (Blut 2008; Backhaus and Voeth 2007; Hoffman et al. 2002). Differentiation and the associated price-inelastic segments on the price-demand function constitute a necessary condition for realizing customer value prices.

Product-related services have several important attributes which justify value as a basis for pricing (Fassnacht 1996). The intangibility, individuality and complexity of the product

and product-related services increase transparency in price setting (Zeithaml et al. 1985; Ia and Shugan 1999; Hinterhuber 2004). However, competitor *prices* in service industries are difficult to compare. The comparison requires more effort than product competition (Hoffman et al. 2002). Additionally, the price of services is an adequate indicator for drawing conclusions about quality. High prices are associated with high quality (Turley and LeBlanc 1993). The interdependency between product and product-related services can also generate a barrier to customer switching (Guiltinan 1987). A customer, who is already loyal to a certain product, generally transfers this loyalty automatically to the product-related service. This can be a comfortable position for the supplier. A value-based argumentation in the price fixing process can lead to a significant reduction of the price accordance to the customer (Hoffman et al. 2002; Diller 2007).

The true suppliers' service-quality reveals after making use of the product-related service. Accordingly, product-related services are especially credence- and (post)experience-goods. Customer value prices are an appropriate method for reducing insecurity about service success and effectiveness. Nevertheless, suppliers must accept to be governed and paid by the customers according to incentive schemes (Reinecke 1997; Voeth and Herbst 2006). The suppliers charge depends on the customer's realized output. Such a pricing process that involves suppliers in the customers' business risk is ideally based on a long-term, cooperative business relationship (Ryals 2006; Tuli et al. 2007).

If suppliers try to charge the added-value created by the complementary characteristics of product and product-related service, a cost-orientated approach would fail. This would lead to an integration of the individual service parts into the price calculation, without integrating the value of the entire product-service bundle (Bhardwaj and Hofstede 2006).

An important condition for customer value pricing is the standardization of added value in monetary scales. Different customers have different perceptions about products and especially about product-related services. Therefore, these products also have a different impact on utility. The variance of perceived value, namely the price for value for product-related services, is greater than the variance of tangible products (Hoffman et al. 2002). Value pricing requires meaningful assumptions about the value perceptions of customers. Instruments for quantifying customer value can be used to prove these assumptions. We present some of these instruments in the following section.

Instruments to quantify customer value

There are several instruments for quantifying customer value for individual product attributes and for overall, total value (Ahlert et al. 2008). In this section, the focus is on instruments which facilitate a monetary value scale. The examined business-to-business relationships include material costs or activity based cost reduction, as monetary components for quantifying value (Belz 2005; Möller and Schwab 2008).

Homburg, Jensen and Schuppar established empirically, that companies with successful price-management compare the costs of processes and conduct profitability analysis (Homburg and Stock 2005). The results of their survey are summed up in Figure 3.
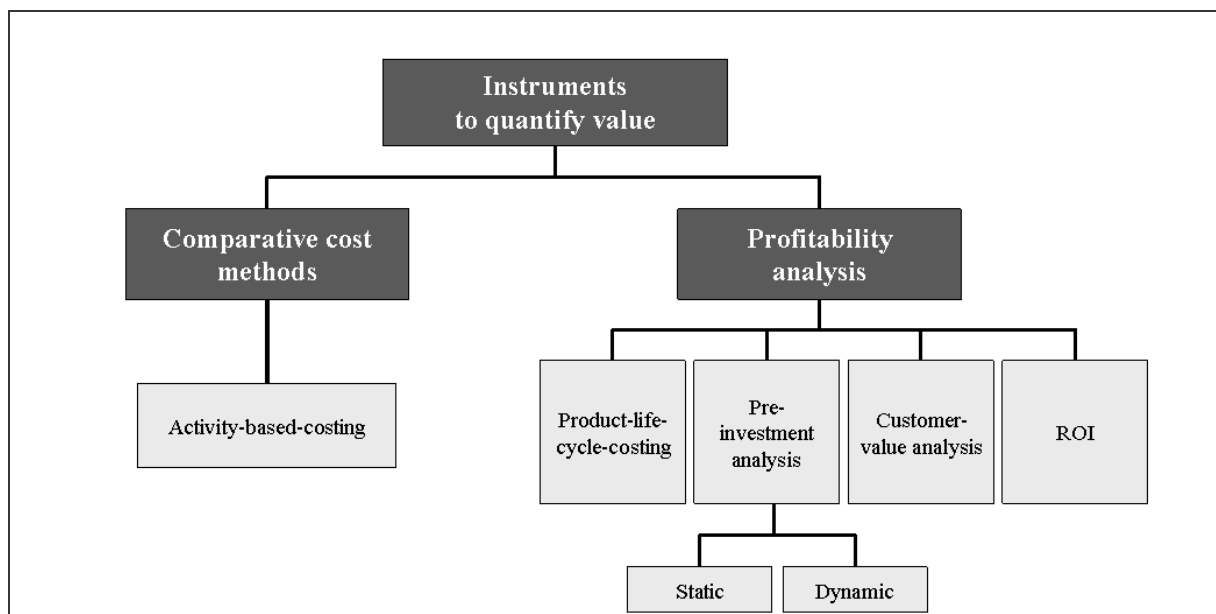
Figure 3: Instruments for quantifying customer value

The essence of activity-based costing is to allocate overheads according to the real use of operational activities, to the products which have to be priced (Mayer 1998; Horváth and Mayer 1993). The process can be regarded as a chain of activities for developing profit potential (Mayer 1998), which creates value, requires recourses and is impacted by a specific cost factor, the so-called "cost driver" (Horváth and Mayer 1993). There are three types of processes. Sub or primary processes and business processes which describe a wide scope of activities. A primary process subdivides a business process into chains of homogeneous activities which are subject to the same cost driver. Sub processes aggregate activities which belong together into cost centers (Horváth and Mayer 1993; Mayer 1998). By comparing the activity based costs, it is possible to reveal changes in the customer demand for services. In

order to reduce the process costs, the customers' logistics and installation can be taken over by suppliers with product-related services. (Belz 2005).

The objective of **product-life cycle-costing** is to consider all costs and benefits associated with a particular product-service-bundle over its lifetime. It is necessary to differentiate between supplier and customer perspectives. The costs for customers are all those incurred in the acquisition, usage and disposal of the products, the so-called "total cost of ownership". This method is useful for comparing the costs of different competitor's offers. The economic value to the customer (EVC) is an example of this instrument (Monroe 2003).

The **pre-investment analysis** is yet another instrument and can be defined as a long-termed capital and decision commitment, which begins with payouts and normally continues with positive cash-flows in subsequent periods (Blohm and Lüder 1995). The important difference between the instruments discussed above is the number of periods considered. **Static methods** assume an average period, which means that analysis is based on representative periods (Götze and Bloech 2004; Hoffmeister 2000). All methods can be differentiated further by considering the target size, e.g. the profit-comparison-method that focuses on investment profit. Other static methods include comparative-cost methods, comparative-profitability-methods or static payback period rules (Blohm and Lüder 1995; Götze and Bloech 2004). Static methods are easy to handle in terms of calculations, because the amount of information required is comparatively low. All in all, one could criticize these methods for concentrating on one target size and not considering differences in time frames.

In contrast to static methods**, dynamic methods** consider more time-periods explicitly. The cash-flow is important for calculations over the entire investment life-cycle (Adam 2000; Blohm and Lüder 1995; Götze and Bloech 2004). Dynamic methods include present-value methods, annuity methods, internal rate of return methods and the dynamic payback-period-rule (Blohm and Lüder 1995; Götze and Bloech 2004; Hoffmeister 2000). All these methods make use of a standardized interest loan for accumulating discounting to a certain point in time.

Like static methods, dynamic methods concentrate on a single target size. Whereas static methods focus only on the cash-flows, dynamic methods require additional information about useful product life-expectancies and interest loans. Therefore, the correspondence with reality is greater with dynamic methods, because of the intertemporal perspective. Profitability analyses are useful for services which are combined with products, e.g. consulting and optimizing machine tools or entire facilities. The results may entail improvements in productivity, reduced downtimes, and higher quality of the manufactured

productivity, reduced downtimes, and higher quality of the manufactured products (Hüttmann 2003). A publication of all costs incurred by the customer makes close cooperation necessary during the pricing process. Therefore, workshops for cost-analysis or suggestions for cost blocks can be made. Scenario analysis is intended to illustrate the financial impact on a product-life-cycle of using product-related services (Jung Erceg 2003).

The **ROI (Return on Investment) method** combines product life-cycle costing with pre-investment methods and is used for more than one period. The customers' monetary advantages of certain services are calculated or estimated (Hartel 2002; Monroe 2003). For this purpose, the economic value of a certain service is calculated and compared to the costs created by this service, more precisely the costs without usage. Target sizes are profitability (Benefit vs. costs), payback period or the absolute saved costs.

There are several problems which occur in the context of investments which cannot be monetarized in series of payment or reduced to a single target size. These investments orientate towards a single target system (Männel 2000).

The **user-value analysis** is an approach to solving these problems. This method compares alternative service offerings in a multidimensional target system according to their degree of performance. The depiction of this system is based on the user-value for all alternatives (Zangemeister 1971). The user-value analysis differs from ordinary pre-investment analysis in that realistic investment decisions are possible where there is a variety of relevant aims, and this is achieved by using qualitative criteria. With the subdivision of evaluation processes into several steps, a more effective depiction of selected aspects is possible. The defining of targets and criteria make the understanding of certain decision-making processes easier for third parties. Qualitative issues are examined explicitly (Hanusch 1994). The user-value analysis is especially useful for comparisons with competitive offers. A supplier which provides product-related-services is thus able to incorporate value into his benchmarks which are difficult to monetarize, such as reactivity and reliability.

Data collection and method

The article addresses the issue of performance caused by appropriate value measurement and value communication. Our objective is to conduct a regression analysis and measure the market and financial performance of firms selling product-related services within the B2B sector. Accordingly, we selected firms which are members of the German association of electronic engineering ZVEI (Zentralverband Elektrotechnik und Elektroindustrie). Value measurement and communication, which form the basis of value pricing, is particularly

and communication, which form the basis of value pricing, is particularly relevant in this sector. Customers nowadays expect the provision of complete solutions and product-related services.

The final sample used for this research project includes 31 companies in the automation sector of ZVEI. The questionnaires were addressed directly to directors and head of departments, who are in charge of the service-delivery units.

All respondents contributing to our study are intended to be "key informants". Despite its popularity, this approach has been criticized in the literature, because a bias in the results may occur through random sampling errors or informant-bias (Phillips 1981; Luft and Shields 2007). However, interviewing key informants is an appropriate method, if capable informants can be identified and reached in the analysis (Kumar et al. 1993). These conditions are fulfilled in our study. The inclusion of the trade association and its specific sub-sections, enable an identification of contact-persons in high positions. Furthermore, we can also identify the economic advantages of this approach.

Figure 4 shows the turnover and number of employees of the represented firms. The average age of the firms in the sample at the time of the particular survey was 30.4 years, and each consisted on average of 243 employees. With respect to industry affiliation, these figures indicate that our sample is fairly representative of all engineering firms in Germany, but with slightly larger numbers of employees than the national average.
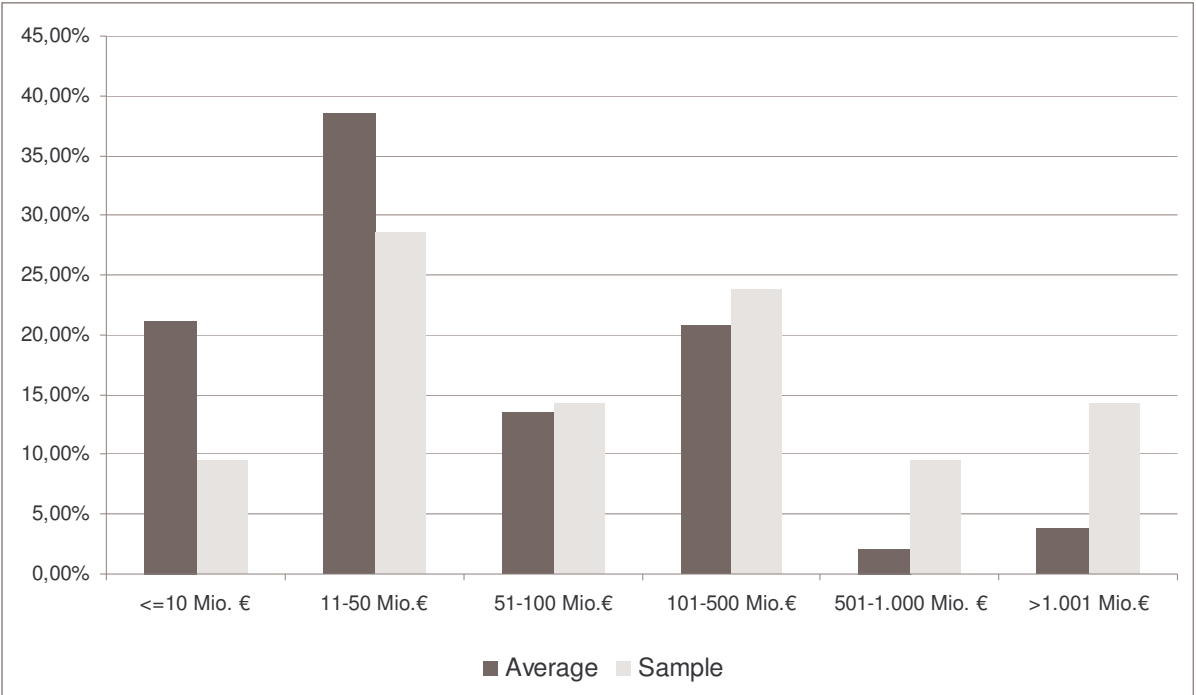

Figure 4: Comparison of realized turnovers between the full sample and the branch average.
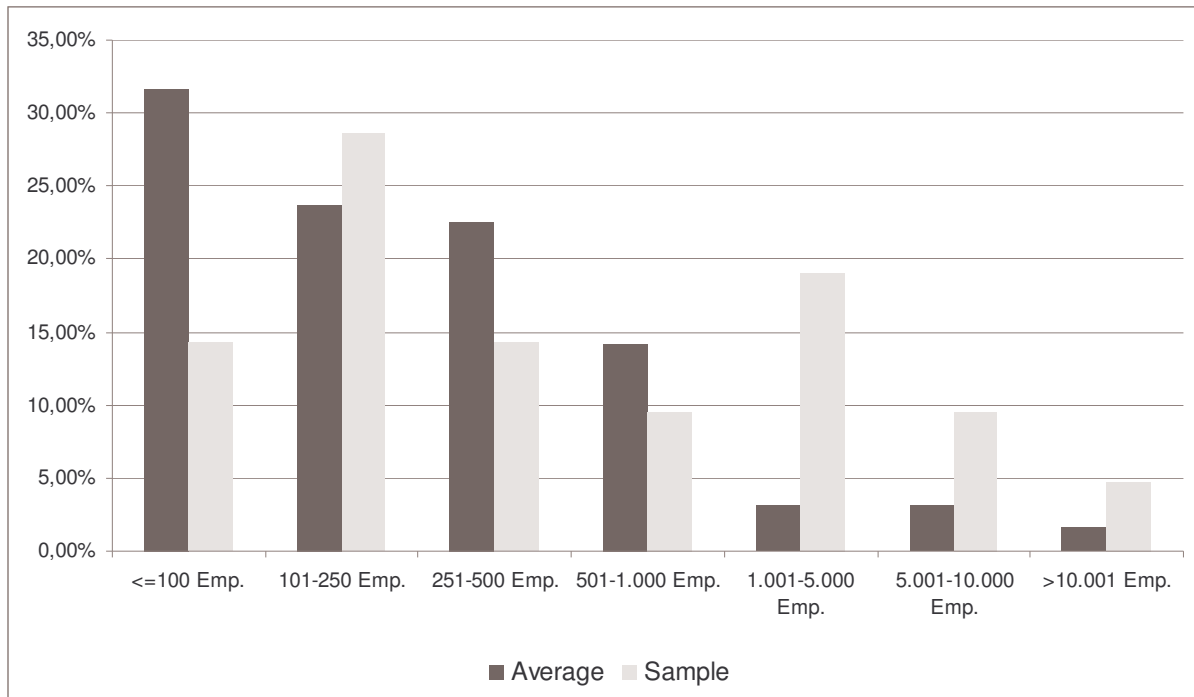
Figure 5: Comparison of number of employees between the full sample and the branch average.

The research tool for our investigation is a standardized questionnaire. In order to avoid dysfunctional effects, pilot questionnaires were sent to 30 managers of ZVEI, who are in charge of service management (CEOs and directors), between May 2008 and June 2008, yielding a response rate of 76,67 % (Schnell et al. 2005). We tested in particular, the degree of difficulty and understandability, interest of respondents, the interview time duration and effects of different questionnaire settings. Finally, we obtained 17 pre-tests and adapted the questionnaires according to the feedback from respondents. The final questionnaire was sent in the third quarter of 2008 and is not yet completed. Consequently, we are presenting the initial results. As a form of stimulus, we promised to provide all respondents with an individualized benchmark to the average. The companies will be reminded by means of telephone calls and emails after expiration of the dead line (Dillman 2000).

We measured performance with multi-item scales adapted from Hooley et al. (2005). Financial performance was measured with the following items: overall profit and profit margin compared to competitors. Market performance comprises total sales and market share. In order to measure customer performance, the satisfaction of customers was measured. Therefore we used a scale provided by Lam et al. (2004). All items were measured on 5-point Likert-type scales, with anchors of 1 = strongly disagree and 5 = strongly agree. Since our study focuses on product-related service, performance measures are additionally asked in the

context of services. So the same scale supposed to be answered for the firms' service business. For each of the performance indicators, a composite performance index was calculated for further analysis. Composite reliabilities for all constructs are larger than .6 (Bagozzi and Yi 1988).

Customer value measurement and value communication were measured by adapting a scale from Narver and Slater (1995), namely: Salespeople are able to measure value, our salespeople emphasize value rather than the final price, our salespeople quantify the value of a service (e.g. by total cost of ownership), our salespeople calculate value in cooperation with customers and our sales people communicate value rather than price. For the measure validation of store appearance, a confirmatory factor analysis was conducted. The final measurements for all scales together are shown in Table 1 and indicate that the scales perform well.

Item	Factor Loading (>.5)	Item to Total
Value pricing (CR = .901)		
Ability to measure the value	.803	.759
Emphasis the value rather the price	.845	.850
Calculation with the customer	.867	.771
Quantify the value of the service	.722	.789
Communicate rather the value than the price	.795	.801

Table 1: EFA of dependent constructs

Initial findings and the HLM approach

Supplier assumptions of customer value

The first focus of the study is to analyze the extent to which suppliers are able to measure and evaluate the value to customer of product-related services. In order to answer this question, we divided the sample into three groups. The first contains the entire sample. The second group consists of firms which claim to have an above-average knowledge of customer value. The third group represents companies which are unable to quantify the value provided to their customers.

According to our initial findings, such risk-orientated value-aspects as reliability and service quality have the highest output. This applies to all groups, but especially to the group that is sure about their perceptions. Moreover, it is evident that attributes have higher outputs than effects. The function of service and cooperation between customer and supplier is rated higher than the effects for the customer.

The attributes of such product-related services as service quality or cooperation with the customer generate higher values than consequences caused by the product-related services. Surprisingly, a well-established partnership dominate the final pay-offs of services through cost savings and higher efficiency.
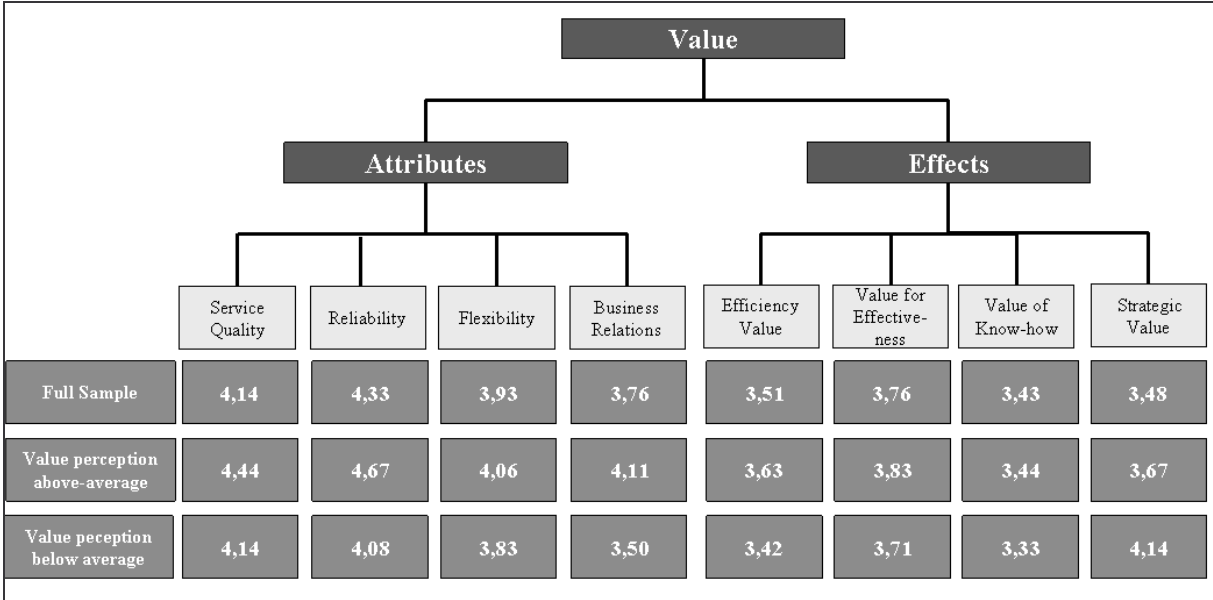
	Service Quality	Reliability	Flexibility	Business Relations	Efficiency Value	Value for Effective-ness	Value of Know-how	Strategic Value
Full Sample	4,14	4,33	3,93	3,76	3,51	3,76	3,43	3,48
Value perception above-average	4,44	4,67	4,06	4,11	3,63	3,83	3,44	3,67
Value peception below average	4,14	4,08	3,83	3,50	3,42	3,71	3,33	4,14

Figure 6: Rating of the suppliers' value types

In a further step, we measured the most important influence factor for customer value. We set up a ranking. The sort key of the ranking is based on the count value type as the most important value-type.

By focusing on the simple mentions, suppliers assume that customers consider reliability as the most important value. Furthermore, the analysis indicates that in terms of individual valuations, reliability was never the highest priority. It is always ranked in second or third place. Moreover, the leading value type in individual valuation is that of reducing downtimes.

Significantly, all suppliers have risk-orientated profiles concerning their assumptions of customer value perceptions of services. Value-types which assure fluent progressions in value added-processes for customers come to the fore.

The suppliers' sales management

Value measurement and communication -as major success factors of value pricing- of product-related services is realized in terms of supplier sales management processes. Figure 7 represents the arguments provided by all sales management staff in our sample, which are divided into three groups. The left bar shows the entire sample, while the bar in the center represents the group that claimed to be above-average in their assumptions of customer value (good knowledge about the customer) and on the right is the group with companies that are uncertain in their perceptions of customer value (bad knowledge about the customer).
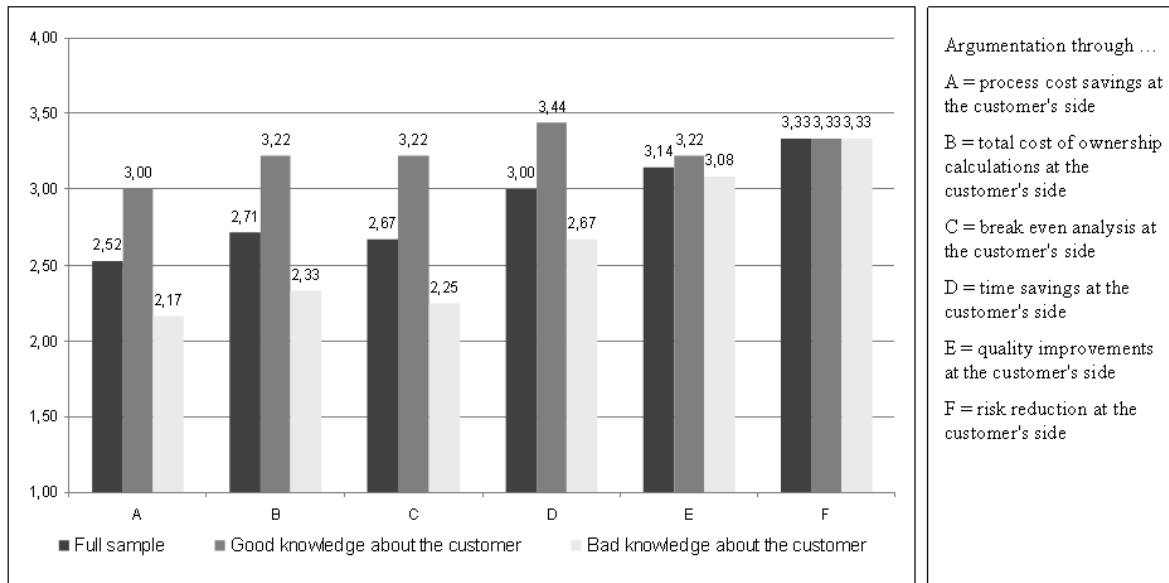

Figure 7: Value-argumentations of sales managements

The argumentation with quantified facts is significantly higher in the second group than in the third, "bad knowledge" one. This makes it clear that insecurity concerning perceptions of value, tends to result in the use qualitative arguments. Again, we notice that risk-orientated argumentations of value have the highest ranking. It is also striking that cost savings are rated lower.

Analysis of used instruments to quantify value

A valid argumentation for values formed by sales management requires instruments which enable a quantification of value. Figure 8 shows the intensity of use of certain instruments, again divide into the abovementioned three groups.
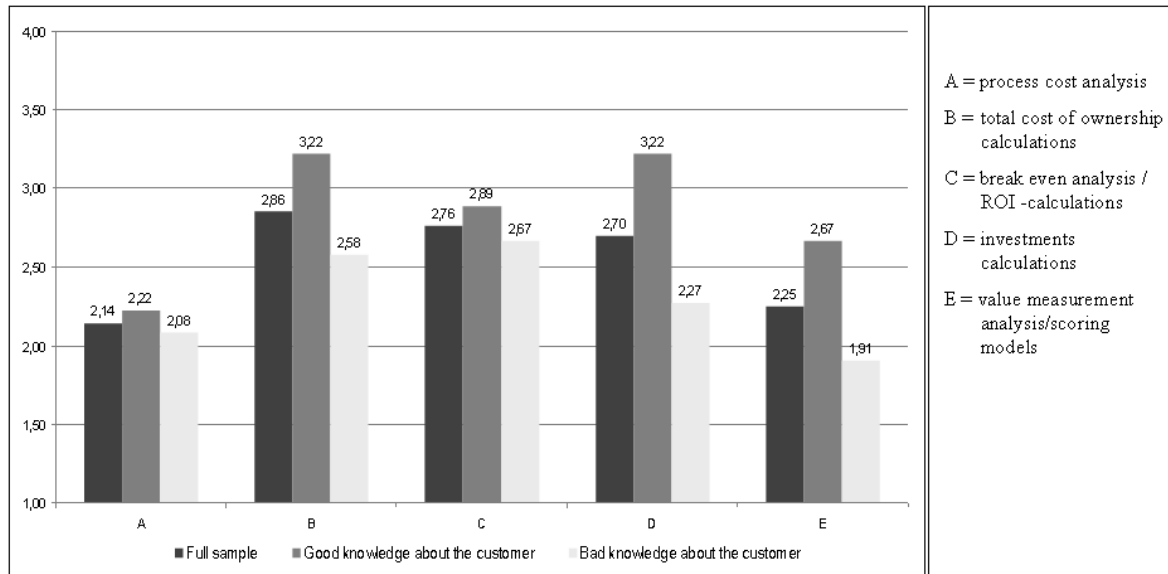
Figure 8: Instruments to quantify value

The survey reveals that the most straightforward instruments are used most frequently. Instruments such as activity-based-costing and customers-value analysis are rated lower. A possible explanation is the variety of assumptions that are required in order to use three instruments. A further reason could be that activity-based costing has a low level of popularity in most companies.

Value pricing and performance

The relationship between value pricing (value measurement/value communication) and performance measures were tested by means of linear regression. The preliminary results of the regression model, including direct effects are presented in Table 2. Since the number of firms limits the interpretation of the reseals, the results indicate a positive impact of value pricing on financial performance (β =.240) and market performance (β = .214). However, results for financial performance are not significant. Regarding the customer performance, the regression analysis indicated the expected direction. Evidently, value measurement and adequate communication increases customer satisfaction (β = .339, $p < .1$).

Independent Variables	Financial Performance		Market Performance		Customer Performance	
	B	t	B	t	B	t
Main effects						
Value Pricing	.240	1,234	.214	1.093	.339	1.768*
R^2		.057		.046		.115

N = 31;* p < .10; ** p < .05; *** p < .01

Table 2: Initial results of regression analysis (Overall performance measures)

The following results focus exclusively on the service business of the firms. The results of the regression model, including direct effects on service performance measures are presented in Table 3. While the hypothesized impact of value pricing on financial service performance and customer service performance is confirmed, value pricing does not relate positively to market service performance.

Independent Variables	Financial Service Performance		Market Service Performance		Customer Service Performance	
	B	t	B	t	B	t
Main effects						
Value Pricing	.461	2.549*	.287	1.503	.467	2,588*
R^2		.213		.083		.218

N = 31; * p < .10; ** p < .05; *** p < .01

Table 3: Initial results of regression analysis (Service performance measures)

The initial results of the regression analysis suggest that a deeper analysis would be worthwhile. Therefore, we show in the next paragraph, how we intend to develop the analysis further. In the context of the International Marketing Trends Congress, we hope to gain further insights and enhance our study.

Further research through conducting a HLM approach

Useful directions for future research arise from methodological considerations. The main questions, which should be answered in an adequate way is to what extend the ability to quantify and communicate the value in an appropriate way influence companies' performance. Therefore, we intend to integrate the customer perspective into the analysis.

From a methodological standpoint, previous studies suffer from two major drawbacks. Empirical studies on value pricing and its relevance for firm's performance are rare. Existing studies also suffer from a common method bias, since there are no adequate data sources for

investigating performance measures from different perspectives (the self-report problem). Secondly, past studies have so far neglected the customer perspective. Especially in B2B markets in which prices are not standardized, but rather negotiated with individual customers, delegating pricing decisions does constitute an option (Homburg et al. 2005). In these industrial markets, there are undoubtedly situations in which firms could charge higher prices to highly satisfied customers. These customers perceive a high level of customer value. In such environments, value pricing, value communication and value measurement could constitute a major managerial focus. Consequently, future research specifically includes behavioral intentions (customer commitment, satisfaction, repurchase intention, price perception and willingness to pay) and customer behavior (customer loyalty and repurchase intention, word-of-mouth complaint behavior and customer defection).

However, pooling the customers from different firms into a single sample would be misleading. We assume that each customer will behave similarly, depending on the firm with which he/she deals. Therefore, we intend to base the study on a hierarchal linear modeling approach (HLM). In a first step, we will measure customer-related outcomes for each firm, so as to analyze differences between the groups. We assume that customers belonging to one firm are very likely to perceive and respond to pricing activities and strategies in a differentiated manner. In a second step, we will conduct a regression analysis, so as to asses the relationship between customer-related outcomes and firm performance (see Figure 9). Unlike many other studies, this one will not suffer from a common method bias, because two data sources are used.
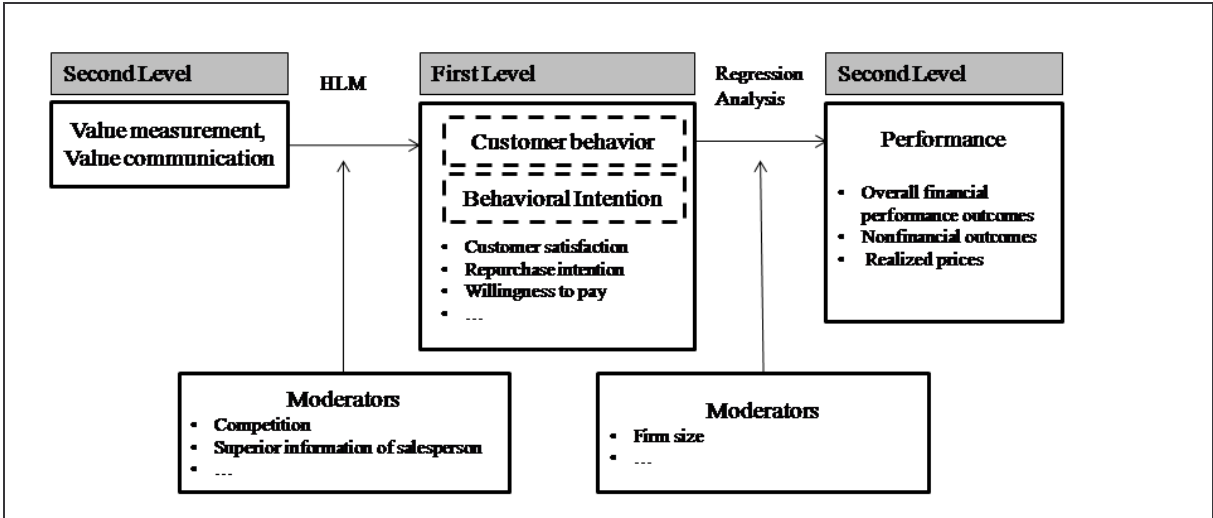

Figure 9: HLM approach

The following investigation seeks to address the issue of performance measurement. We intend to measure such customer-related outcomes as satisfaction, loyalty and willingness to pay. The second step measures the influence on firm performance. Therefore, the study is divided into two parts. In the first part, we collected data from firms involved in machinery manufacturing and their sales organizations. Even if the participating firms constitute a more or less homogeneous group, the value pricing, including the communication and the measurement varies considerably. Firms provided responses on current sales practices, performance measures for their business unit, characteristics of salespeople, organizational and environmental issues.

In order to implement a hierarchical linear modeling approach, we intend to include customers of the firms. This is an important innovative element of the research. Customers will be questioned about their behavioral intentions (commitment, satisfaction, repurchase intention, price perception and willingness to pay) and customer behavior (customer loyalty and repurchase intention, word-of-mouth complaint behavior and defection).

The research method is an HLM, which is a simultaneous two-step approach to modeling multilevel relationships. The first step estimates a separate regression for each firm participating in the study. Step 2 of the HLM models the variance in the individual level intercepts and slopes, using the group-level variable. In order to test the effects of price delegation to the sales force, we estimate the following equations:

Level 1:

$$Y_{ij} = \beta_{0j}(Cust\_rel\_Out\_1) + \beta_{2j}(Cust\_rel\_Out\_2) + \beta_{0j}(Cust\_rel\_Out\_\_3) + r_{ij} \quad (1)$$

Cust_rel_Out = Customer related outcomes (Willingsness to pay, customer satisfaction…)

Level 2:

$$\beta_{0j} = \gamma_{00} + \gamma_{01}(\text{Pr}iceCompetition) + \gamma_{02}(InformationAsymmetry) + ... + U_{0j} \quad (2)$$

$$\beta_{qj} = \gamma_{q0} + U_{qj} \text{ for q= 1,2,3} \quad (3)$$

where, Y_{ij} is the dependent variable measured at the individual level for individual i in the group j, β_{0j} is the intercept value for group j, γ_{00} the intercept value for group level variable, γ_{00} the slope term for group level variable, r_{ij} the random individual error, and U_{0j} the group-level residual. Following the HLM, we conduct a regression analysis between the customer related outcomes and the performance measures.

Discussion

Pricing decisions are major elements of firms' marketing strategies and decisions on value pricing constitute core decisions for profit-oriented firms. Our first empirical findings suggest that value pricing aims at reducing the risk on the customer side. This is remarkable, because in the literature, cost savings were the most frequently mentioned aspect. However, the threat from perceived risks is the dominant argument for salespersons selling services.

Concerning the fit between value perception and value communication, we can observe some initial results. By considering the use of instruments, it is evident that one determinant of usage is simplicity. The rather complex instrument of activity-based costing is thus rarely used.

This study contributes to value pricing research in two important ways. First, by introducing our first finding, we confirm the indicated relationship between value pricing and the company's performance (financial, market and customer performance). However, caused by the limited empirical data base, results have to be interpreted as initial results. Consequently, findings are rather tendencies than final general results. Nevertheless, we do not doubt the representativeness as a result of the relatively small response-rate. Furthermore, the focus on one sector constitutes a limit to generalization.

Secondly, based on our findings, we developed a further research approach, namely hierarchical linear modeling (HLM). The study investigates the largely overlooked consequences of price authority on customer attitudes and behavior. The following questions are to be answered. Do customers perceive different levels of value communication and value measurements? Is customer willingness to pay influenced by the degree of value communication and certain instruments used in value measurement? What methods justify a higher price of product-related services?

Furthermore, the research provides an analysis of the relationship between customer behavior and firm performance measures, by using two different data sets. Therefore, the data does not entail classic self-reporting problems.

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