

Successful new product pricing practices

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SUCCESSFUL NEW PRODUCT PRICING PRACTICES: A CONTINGENCY APPROACH

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Abstract

The purpose of this study is to examine the success of new product pricing practices and the conditions upon which success is contingent. We distinguish three different pricing practices based on the information they are based on: information on customer value, competition, and costs. Following Monroe's (1990) price discretion, we argue that the success of these practices is contingent on relative product advantage and competitive intensity. The hypotheses are tested on pricing decisions for new industrial products. Our results show that there are no general "best" or "bad" practices, but that a contingency approach is appropriate. These results may help reduce the complexity that managers experience in pricing- new products.

Key words: Pricing; New Product Development; Competitive Strategy.

Pricing research in marketing has predominantly focused on normative strategies (e.g. Tellis 1986), and consumers' price and value perceptions (e.g. Gijbrenchts 1993). Few studies have focused on the practices through which organizations arrive at price settings (e.g. Cressman 1999b, Monroe and Mazumdar 1988, Oxenfeldt 1973, Rao 1984).

Pricing literature suggests that firms set prices by assessing customer elasticity and competitive prices and then set prices to maximize profits (Pashigian 1998). In organizational practice however, pricing is far more complex than suggested in the pricing literature (Diamantopoulos 1991, Oxenfeldt 1973). From a resource-based perspective, for example, pricing is a complex process that requires resources and coordination (Dutta, Zbaracki, and Bergen 2001). The means through which firms arrive at price decisions are referred to as *pricing practices*. In the past, research has examined pricing practices in case studies of pricing processes (Bonoma, Crittenden, and Dolan 1988, Foxall 1972, Hague 1971), and in surveys of pricing methods such as value-based, competition-based, and cost-based pricing (Abratt and Pitt 1985, Piercy 1981, Tzokas, Hart, Argouslidis, and Saren 2000, Udell 1972).

Our study aims to contribute to this literature in several ways. We examine pricing in the context of new product price decisions. The complexity of pricing is perhaps nowhere felt harder than in this situation, and the necessity for insight in success factors more urgent (Shapiro and Jackson 1978). Our study is the first to examine the success of three pricing practices with respect to different types of information used in the pricing process (respectively on customer value, competition, and costs). In this respect, we follow recent calls for research on *successful* pricing practices (Cressman 1999, Noble and Gruca 1999b). Second, we show that the effects of value-, competition-,

and cost-information on new product performance are contingent on product and market characteristics. In particular, we examine the moderating effects of relative product advantage and competitive intensity on new product success. In addition, we discuss several measurement issues that are relevant to survey research on pricing practices.

In the following sections we discuss pricing as an organizational process, introduce the concepts included in our study, and formulate hypotheses. Next, the empirical method and results are presented. The hypotheses are tested in three different models representing three different contingencies on 77 introductions of new industrial products. Finally, results are discussed and implications for future research identified, including measurement issues that are relevant for future research on pricing practices.

1. THE PRICING PROCESS

As pricing textbooks make clear, pricing is enormously complex in business practice (Monroe 1990; Nagle and Holden 1995). Firms that are more competent in pricing, deal with this complexity in superior ways (Dutta, Zbaracki, and Bergen 2001, Monroe 1990).

To deal with complexity, firms do not analyze all available information, but engage in pricing practices (Hague 1971). Pricing practices refer to the set of activities executed by an organization's managers that lead to a price decision. They occur in the context of an organizational process in which information is gathered, shared and interpreted. Whereas pricing strategies are visible in the market in the form of price changes, price bundles, price levels within a product line, or otherwise (Noble and Gruca 1999a), pricing practices are hidden behind the boundaries of the organization. Prior contributions to empirical pricing literature (e.g. Tzokas, Hart, Agrouslidis, and Saren

2000) often use the term pricing methods to indicate the activities firms use to set prices. Since the term pricing methods is often interpreted to involve mutually exclusive methods, we prefer the term pricing practices, in line with qualitative evidence that firms use different types of information simultaneously in a price decision (e.g. Bonoma, Crittenden, and Dolan 1988, Hague 1971, Foxall 1972, Pearce 1956).

To clarify the superiority of certain firms in dealing with the complexity of a pricing process, Monroe (1990, p. 12) conceptualizes a price decision as in Figure 1. In determining the initial price discretion, the maximum price depends on the customers' perceptions of value in the seller's offering. Direct variable costs set a floor. A successful price lies between these boundaries. The complexity increases however, if the firm aims to understand its final price discretion. Competition may reduce the price ceiling, whereas corporate objectives with respect to covering indirect costs, as well as regulations may increase the price floor. "Normally, after considering all of these factors, there will be a much narrower range of pricing discretion. Depending on the type of product and characteristics of demand and competition, this pricing discretion could still be relatively large or it could be nonexistent" (Monroe 1990, p 13). Determining a successful price becomes therefore highly difficult.

[Insert Figure 1]

In summary, firms that manage to achieve pricing objectives in superior ways are more competent in pricing, meaning that they deal better with the complexity of a pricing process. Dealing with this complexity comes down to understanding the final pricing

discretion (Monroe 1990). The pricing practices in which firms engage should focus on those types of information that help them to understand the price discretion. These types of information depend on the shape of the price discretion, which is in itself a consequence of product and market characteristics (Monroe 1990, p. 13). Thus, the pricing practices that firms should engage in are contingent on product and market characteristics.

2. CONCEPTS

New product performance. We examine the effect of pricing practices on new product performance. New product performance evaluates the achievements of the new product in the market since its launch, relative to its stated objectives (Atuahene-Gima 1995). We focus on three pricing practices that are based on the use of information on customer value, competition, and costs, respectively. On the basis of these types of information, firms can assess quantifications that may inform it about the price discretion. Because the use of customer value, competition, and cost information should be seen as a matter of degree, rather than mutually exclusive categories, we use the terms cost-informed, competition-informed, and value-informed pricing, instead of cost-based, competition-based and value-based pricing.

Value-informed pricing informs the firm about the question: What is the customer's perception of our product value? This can be quantified by assessing the monetary amount that customers are willing to pay for the perceived benefits they will receive if they accept the market offering (Nagle and Holden 1995). In the context of new

industrial products these may be cost savings or increases in productivity that the purchasing company experiences if it adopts the product (Anderson and Narus 1999).

Competition-informed pricing informs the firm about the question: How and how much do competitors charge for the perceived benefits they offer? Interpreting competitors' prices relative to their market position enables a quantitative assessment of the firm's relative position. For example, if the firm's product offers slightly less benefits than the competitor's product, an assessment based on- competition information probably results in a price slightly below the competitor's price.

Cost-informed pricing may lead to assessments of prices by quantifying the variable and fixed costs with respect to the development, production, and marketing of the new product. It informs the firm about the question: What's the bottom-line price we need in order to be profitable? Including information on fixed costs as well as information on variable costs is important to determine the final price discretion (Monroe 1990). Fixed costs however increase the ambiguity of cost information since they can only be assessed on the basis of accurate assessments of the expected volume (Nagle and Holden 1995).

Contingencies. With respect to the product and market contingencies that determine whether pricing practices contribute to new product performance, we examine relative product advantage and competitive intensity. First, relative product advantage pertains to the relative superiority of the new product over competition (Atuahene-Gima 1995). Consistently, relative product advantage is found to be a strong predictor of new product performance (Henard and Szymanski 2001). Competitive intensity pertains to the market in which the new product was introduced (Atuahene-Gima 1995). In marketing

strategy literature, competitive intensity is seen as a major force that erodes the ability of the firm to reap the benefits of the customer value it creates (e.g. Achrol 1991, Day and Montgomery 1999, Homburg and Pflesser 2000).

3. HYPOTHESES

Table 1 distinguishes between three contingencies: (1) high relative product advantage; (2) high competitive intensity; and (3) high relative product advantage *and* high competitive intensity.

[Insert Table 1]

First, relative product advantage distinguishes a product from competitors' products in terms of the customers' perception of value (Gatignon and Xuereb 1997). If relative product advantage is high, the firm should be well informed about the customers' value perceptions in order to assess the upper-limit of the pricing discretion (Monroe 1990). Thus, the higher the relative product advantage, the more value-informed pricing will enable the firm to understand its price discretion, and the more it contributes to performance (cell 1). We hypothesize:

H₁: Value-informed pricing is more effective when the relative product advantage is higher.

Products that offer low relative advantage hardly distinguish themselves from competitors' products (Gatignon and Xuereb 1997). Therefore, these products are likely

to be compared by customers, using the competitor's price as a reference price (Monroe 1990). In this case, competition-informed pricing enables the firm to assess the upper-boundary of the pricing discretion. Thus, when the relative product advantage is low, competition-informed pricing will help the firm to understand the price discretion and perform better in the market. Or vice versa: the higher relative product advantage, the less competition-informed pricing contributes to performance (cell 2):

H₂: Competition-informed pricing is less effective when the relative product advantage is higher.

If the possibility exists that prices drop below the price floor, it is important for a firm to assess the lower-limit of the price discretion (Monroe 1990). High product advantage ensures a high upper-boundary, thereby widening the price discretion and making it easier to determine a price between the price ceiling and price floor. If relative product advantage is low, the price discretion becomes narrower, making it difficult to set a price between the price floor and the price ceiling. This increases the chance that a price is determined below the price floor. In other words: the lower relative product advantage, the more cost-informed pricing informs the firm about the price discretion, thus contributing to performance. Or, vice versa: the higher the relative product advantage, the weaker the effect of cost-informed pricing on performance (cell 3). We hypothesize:

H₃: Cost-informed pricing is less effective when the relative product advantage is higher.

Under conditions of high competitive intensity, product advantage is likely to erode faster. This will have a tampering effect on the upper-boundary of the price discretion

(Monroe 1990). In this situation, customer value information is quickly outdated, making it more difficult for the firm to assess the upper-boundary of the price discretion on the basis of this type of information. Thus, the higher competitive intensity, the less value information will help firms to understand the price discretion and, therefore, the less this type of information enhances performance (cell 4):

H₄: Value-informed pricing is less effective when competitive intensity is higher.

Competitive intensity is unlikely to affect the degree to which customers can compare the new product with existing alternatives on the market. Therefore, it is equally difficult for firms to assess the upper-boundary of the price discretion on the basis of competition information in situations of high and low competitive intensity (cell 5). Competitive intensity increases the chance that the firm will be confronted with competitors' innovations that match or even exceed the advantage of the firm's product. In this situation the firm may be forced to drop the price of the product, making assessments of the lower-limit of the price discretion more important. Thus, in situations of high competitive intensity, cost-informed pricing becomes more important to understand the price discretion, thus increasing performance (cell 6):

H₅: Cost-informed pricing is more effective when competitive intensity is higher.

In the situation that a product with a high advantage over competing offerings is launched in a market with intense competition, the effect of value-informed pricing on the new product's performance is expected neither to increase nor decrease (cell 7). Relative

product advantage enhances the effect of value-informed pricing on performance, whereas intense competition mitigates this effect at the same time. Competition-informed pricing is expected to have a negative effect on performance (cell 8) as relative product advantage has a diminishing effect on the influence of competition-informed pricing on performance and competitive intensity is expected to have no effect (see cell 5). Finally, we expect the negative effect of cost-informed pricing on performance under the condition of high relative product advantage to be neutralized by the positive effect in situations of high competitive intensity (cell 9). Therefore, we formulate the following hypothesis with respect to both contingencies:

H₆: Competition-informed pricing is less effective when competitive intensity and relative product advantage are-is higher.

4. METHOD

4.1 Data Collection and Sample

We developed a questionnaire that focuses on the latest new product launch in which the respondent's company had been involved. The questionnaire was mailed to 590 marketing or general managers of firms drawn from a comprehensive Belgian industry database. Prior studies on pricing in industrial markets show that in many firms either the general manager or the marketing manager is responsible for the price decision (Abratt and Pitt 1985, Frambach, Nijssen, and Van Heddegem 1997). Respondents were asked to forward the questionnaire to a person responsible for new product pricing decisions in case they were not responsible for these decisions themselves. After receipt of the questionnaire, a recall-phone call was made and repeated every two weeks. Respondents were reminded up to three times. A total of 78 questionnaires were finally returned,

representing a response rate of 13.2 %. One questionnaire was removed from the sample since it had too many missing values. We tested non-response bias by comparing early, average and late respondents (Armstrong and Overton 1977). In t-tests for all variables included in this study, no significant differences in the mean responses were found, suggesting that response bias is unlikely to be a problem.

Our sample consists of firms from the electronics and engineering industries. Research on pricing strategy in industrial contexts is scarce (Noble and Gruca 1999a). This context is particularly interesting for research on successful pricing practices for two reasons. First, value-informed pricing is relatively easy to implement since value can be quantified by for instance quantifying the increase of the customer company's turnover and/or a decrease of the customer company's costs if it adopts the innovation (Anderson and Narus 1999). Second, the arguments used to justify a price are likely to be carefully analyzed by customers, since the purchasing process of capital-intensive industrial products is typically a group decision-making process that involves intense information gathering (Ward and Webster 1991). The information on which a price decision is based may therefore impact new product performance relatively strong in this context.

4.2 Measurement

Many prior studies use mutually exclusive category indicators to measure pricing practices that do not accurately tap the degree to which different kinds of information are used (e.g. Abratt and Pitt 1985, Piercy 1981, Udell 1972). Also, single item measures (Tzokas, Hart, Argouslidis, and Saren 2000) and summated scales (Noble and Gruca 1999a) are unlikely to accurately tap the information used in a pricing process, for two

reasons. First, like the domains of many concepts in social sciences, the domains of value-, competition- and cost-informed pricing as defined in this study, are too broad to be measured by a single item (Churchill 1979). Second, asking managers about the information used in a pricing process may be prone to a social response bias, since managers are likely to justify prices on the basis of costs. This observation was introduced to pricing literature as early as the 1950s (Pearce 1956) and later used by Foxall (1972), but seems to be overlooked by more recent studies on pricing practices.

Therefore, to measure value-, competition-, and cost-informed pricing, we developed new multiple-item measures. We created an item pool on the basis of literature and interviews in various industries (Churchill 1979). Items were measured using a 10-point scale, the upper-end indicating “played a major role in price setting”, and the lower-end indicating “was not important at all in price setting”.

In order to minimize the risk of a social response bias, items on customer value, competition and cost factors were presented in the questionnaire in random order, also including a number of additional items not measuring any of the three groups of pricing factors included in this study. As a final check on a possible social response bias in value-, competition-, and cost-informed pricing, we conducted 10 interviews. In 5 interviews we asked managers to fill out a questionnaire with purified scales in which the items measuring factors on which prices are based were presented in random order. After they finished, we asked them to describe the pricing process of the new product, as well as to indicate what kind of information they used and on what information the final price is based, using the interview techniques advised by Pearce (1956) and Foxall (1972). In the other 5 interviews we followed the same procedure but started with the open questions

and finished with the questionnaire. In all 10 interviews, the stories told by the managers generally fit the answers to the questionnaire. This leads us to conclude that a social response bias is not a problem in our scales.

Measures on new product performance, relative product advantage and competitive intensity were adapted from Atuahene-Gima (1995). With respect to new product performance, respondents were asked to rate the degree to which the product had been successful in meeting its objectives since its launch. Items were measured on a 10-point scale, the lower end indicating “wasn’t reached at all” and the upper end indicating “was completely reached”.

After collecting the data, all measures used in this study were subjected to purification using exploratory factor analysis, and reliability coefficient alpha (Churchill 1979). This approach was chosen over a confirmatory factor analysis, since our sample is too small to match the advised 1 to 10 data-parameter ratio of structural models (Kline 1998). In order not to violate this ratio in the exploratory analysis, only two constructs were compared at a time. All pairs of measures were compared. Items that had very weak loadings or loaded on more than one factor were eliminated. To enhance discriminant validity, items that relate directly to pricing strategies as studied by Noble and Gruca (1999a) were included, like the degree to which the price is based on learning curve effects (skimming), penetration, or product line. These items generally loaded on more than one factor, which supports our view that pricing strategies are the result of a pricing process in which different sources of information are used. Next, the reliability coefficient alpha of each measure was calculated and item-to-total correlations were inspected. Items with low correlations were eliminated. The final scales closely represent

the concepts' domains, as they were initially defined. Cronbach Alphas range from .73 to .91 and therefore our measures can be considered reliable.

The use of 10-point scales has the advantage that it is the most common rating scale in Belgium. It has a disadvantage in that extreme scores may strongly impact the mean of all scale items. For this reason we standardized item scores before calculating the scale means that are imputed in the regression analyses, which satisfies the condition that all scale items are equally important (Churchill 1979). All scales used in this study are reported in the appendix. The correlation matrix of the purified measures is reported in Table 2.

[Insert Table 2]

4.3 Theory Testing Approach

The three contingencies of new product launch were each tested in a separate model. This enables us to detect the impact of the proposed contingencies independently from each other. As such, the first model tests the interactions with respect to relative product advantage, the second model with respect to competitive intensity, and the third model with respect to relative product advantage and competitive intensity. We run moderating regression analyses including simple effects of all components, as well as multiplicative interaction terms of independent and proposed moderator variables (Irwin and McClelland 2001). Significant interaction terms suggest that the moderator variable (relative product advantage, competitive intensity) modifies the relationship between the

independent variable (e.g. cost-informed pricing) and the dependent variable (new product performance) (Schoonhoven 1981).

[Insert Table 3]

5. RESULTS

The simple effects (Part A, Table 3) suggest that value-informed pricing generally contributes to new product performance, whereas competition-informed and cost-informed pricing have no significant effect. These findings suggest that value-informed pricing generally improves new product performance beyond the hypothesized contingency effects. The effect of relative product advantage on new product performance is found in most studies on new product development, and is confirmed here (Henard and Szymanski 2001). Our result on the effect of competitive intensity on new product performance suggests that firms in highly competitive environments are more satisfied with achieving new product objectives than firms in stable environments and thus report higher scores on new product performance.

With respect to our findings on high relative product advantage (Part B, Table 3), we find a significant positive interaction effect for value-informed and a significant negative interaction effect for competition-informed pricing. These results support hypotheses 1 and 2 respectively. Contrary to hypothesis 3, we find no interaction effect for cost-informed pricing.

In situations of high competitive intensity (Part C, Table 3), we find a negative interaction effect for value-informed, a positive interaction effect for cost-informed and

no effect for competition-informed pricing, which is consistent with our expectations (Hypotheses 4 and 5).

In situations of high relative product advantage and competitive intensity (Part D, Table 3), we find a negative effect for competition-informed pricing supporting hypothesis 6. In addition, we find no interaction effect for value-informed pricing and a positive effect for cost-informed pricing. The positive effect of cost-informed pricing is unexpected, but in line with the non-significant effect of cost-informed pricing and relative product advantage. We will discuss these findings in the next section. To check the stability of these findings, we carried out a jackknifing analysis by randomly removing 5 respondents at a time and repeating the analysis. Since only little variation in the results was obtained, our results may be considered stable (Hair, Anderson, Tatham, and Black 1995).

6. DISCUSSION

The objective of this study is to improve our understanding of the success and the contingencies to success of pricing practices. Our results show that the success of using information on customer value, competition, and costs in setting prices, is contingent upon relative product advantage and competitive intensity. Only value-informed pricing has a strong direct effect on new product performance. The effectiveness of cost-informed and competition-informed pricing depends on whether the product has a high relative advantage and on whether competitive intensity in the market is high. This suggests that there is no generally “best” or “bad” practice, but that a contingency approach is appropriate. Our findings with respect to the conditions under which pricing

practices contribute to new product performance may reduce the complexity firms experience in pricing a new product. In addition to our substantive results, we have come across several measurement issues. These are discussed in the future research section.

Our results on price decisions for new industrial products suggest that value-informed pricing helps the firm in achieving superior new product performance. This is even more the case when relative product advantage is high. In the latter case, the firm increases its understanding of the price discretion when it informs itself about the customer's value perception. To reap the benefits of having a high relative product advantage, firms should clearly take this into account in their price. However, in markets with intense competition, the contribution of value-informed pricing to new product performance decreases, since the upper-limit of the price discretion is unlikely to be sustainable. If the product has no superior advantage over competitors' products, but aims to attack a competitor's superior position - a so called "me too" product - competition-informed pricing contributes more to success. In this situation, competition-informed pricing informs the organization on the upper-limit of the price discretion, thus enhancing its ability to understand the price discretion.

Our results also suggest that cost-informed pricing increases the organization's understanding of the lower-limit of the price discretion, thereby contributing to new product performance. This is especially the case in competitively intense markets, where products may need to increasingly compete on price over time. The contribution of cost-informed pricing to new product performance is not contingent upon the relative product advantage. This finding suggests that the use of cost information in price decisions for products offering superior advantages does not harm the product's performance. In fact,

if the product is launched in market with intense competition, it is a successful practice. As such, the only situation in which cost-informed pricing may harm new product performance, is under very low competitive intensity.

As suggested by Nagle and Holden (1995) and Cressman (1999) our findings indicate that creating customer value, and pricing accordingly, is a route to new product performance. However, the degree to which value can be sustained is also an important consideration. In situations in which firms have little competition, or value can be sustained otherwise - for instance through protection by patents - a combination of creating customer value and value-informed pricing pays off. We find that new products that do not offer more value than competitors' products are best priced on the basis of competitor information. For example, this seems to be a safe approach for companies following strong market leaders in highly concentrated markets.

The finding that the use of cost information has no negative effect on new product performance in situations in which the firm has created superior customer value, and that it even has a positive effect in situations of intense competition, shines a new light on the results of prior studies. For instance, Coe (1990) interpreted an increase of cost-based pricing throughout the 1980s as a consequence of a parallel decrease of innovation strategies. Our results suggest that the increased use of cost information in pricing can also be caused by the growing competition during that decade. Cressman (1999) expresses worries about the high percentage of firms in Noble and Gruca's (1999a) sample that engage in cost-based pricing (56 %), suggesting that these firms are ignorant about the market in price decisions. Taking into account the contribution of cost information to performance, this high percentage doesn't seem worrisome after all.

Finally, our study challenges the finding from Henard and Szymanski's (2001) meta-analysis that relative product advantage is the most important predictor of new product performance. In our study, value-informed pricing is a stronger predictor of new product performance than relative product advantage is. This finding may suggest that the importance of pricing practices have been underestimated in marketing literature for a long time and that the topic deserves more attention in future research.

6.1 Limitations and Future Research

This study has some limitations that present opportunities for future research. First, our study is limited in terms of the selected industries, the geographical scope, and sample size. The sample is restricted to firms from electronics and engineering industries. These industries are characterized by high fixed and low variable costs. The results may be different in industries that do not share these characteristics. The geographical scope is limited to Belgium, and our hypotheses are tested on 77 observations. Second, we used single informants to gather our data. Future research may replicate our research in different industries and countries, gathering data from multiple informants in one firm. Third, we limited the contingency variables to relative product advantage and competitive intensity. Future research could examine the impact of other product and market characteristics that may influence the effectiveness of different price practices. Future research may also examine other pricing practices that may occur in a pricing process, such as determining pricing objectives, and it may study different types of pricing processes, such as price alterations.

Finally, we came across four measurement issues that may benefit future research. First, pricing practices are different from pricing strategies and thus should not be included in the same measurement instrument (Coe 1990, Noble and Gruca 1999a). Pricing practices refer to the use of information in a pricing process that leads to price decisions, and pricing strategies refers to how the firm tries to achieve its pricing objectives in the market place. Second, the use of all three types of information (customer value, competition, and costs) should be included. Including only cost information in a study (e.g. Noble and Gruca 1999a) may lead to an incomplete picture of the degree to which firms include market information in their price decisions. Third, firms are unlikely to rely exclusively on a single type of information in a pricing process. Thus, a measure with mutually exclusive categories (Coe 1990, Piercy 1981, Udell 1972) is less likely to capture the diversity in the types of information used in a pricing process. Fourth, measuring the degree to which firms use different types of information in a pricing process might be prone to a social response bias. Managers tend to justify prices in terms of costs in order to leave an impression of a “fair” pricing practice (Pearce 1956, Foxall 1972). For these reasons we developed multiple-item measures on the concepts of cost-informed, value-informed, and competition-informed pricing, that indicate the degree to which different kinds of information are used to arrive at a price decision. Future research could develop these measurement instruments further..

7. APPENDIX: SCALE ITEMS ¹

To what degree were the following factors included in the price setting process of the new product/service? In other words: to what extent did you take into account the following elements while determining the price of the new product/service?

	mean	Standard deviation
Value-Informed Pricing (Alpha = .81)		
The advantages of the product compared to competitors' products	7.03	2.58
The customer's perceived value of the product	7.19	2.12
The advantages the new product offers to the customer	7.34	2.52
The balance between advantages of the product and price	6.91	2.39
The advantages of the product compared to substitutes	6.72	2.62
Competition-Informed Pricing (Alpha = .91)		
The price of competitors' products	7.05	2.57
The competitor's current price strategy	6.72	2.71
The estimation of competitor's strength to react	6.20	2.66
The market structure (number and strength of competitors)	6.49	2.50
The degree of competition on the market	7.12	2.48
The competitive advantages of competitors on the market	5.62	2.79
Cost-Informed Pricing (Alpha = .75)		
The variable costs of the product	5.16	2.32
The price necessary for break-even	5.93	2.97
The investments in the new product	5.62	2.57
The share of fixed costs in the cost price	5.87	2.70
Relative Product advantage (Alpha = .74) (Adapted from Atuahene-Gima 1995)		
The product offered higher quality than competing products	7.31	2.26
The product solved problems customers have with competing products	6.84	2.44
The product was very innovative and substituted an inferior alternative	6.50	2.79
Competitive Intensity (Alpha = .73) (Adapted from Atuahene-Gima 1995)		
Intense price competition	7.04	2.36
Strong competitor sales, promotion and distribution systems	6.43	2.56
Strong and good quality competing products or services	6.50	2.28
New Product Performance (Alpha = .79) (Adapted from Atuahene-Gima 1995)		
Turnover objectives since its launch	7.41	1.90
Profit objectives since its launch	6.86	2.03
Marketshare objectives since its launch	7.25	2.05
Competitive advantage objectives since its launch	7.19	2.28

¹ All items are measured on 10-point Likert-type scales.

REFERENCES

- Abratt, Russell and Leyland F. Pitt. (1985). "Pricing Practices in Two Industries," *Industrial Marketing Management*, 14, 301-6.
- Achrol, Ravi S. (1991). "Evolution of the Marketing Organization: New Forms for Turbulent Environments," *Journal of Marketing*, 55 (October), 77-93.
- Anderson, James C. and James A. Narus. (1999). *Business Market Management: Understanding, Creating, and Delivering Value*. Upper Saddle River, NJ: Prentice Hall.
- Armstrong, J. Scott and Terry Overton. (1977). "Estimating Nonresponse Bias in Mail Surveys," *Journal of Marketing Research*, 14 (August), 396-402.
- Atuahene-Gima, Kwaku. (1995). "An Exploratory Analysis of the Impact of Market Orientation on New Product Performance-A Contingency approach," *Journal of Product Innovation Management*, 12, 275-93.
- Bonoma, Thomas V., Victoria L. Crittenden, and Robert J. Dolan. (1988). "Can We Have Rigor and Relevance in Pricing Research." In Timothy M. Devinney (ed.), *Issues in Pricing, Theory and Research*. Lexington, MA: Lexington, 337-59.
- Churchill, Gilbert A. Jr. (1979). "A Paradigm for Developing Better Measures of Marketing Constructs," *Journal of Marketing Research*, 16 (February), 64-73.
- Coe, Barbara J. (1990). "Strategy in Retreat: Pricing Drops Out," *The Journal of Business and Industrial Marketing*, 5, (Winter/Spring), 5-25.
- Cressman, George S. Jr. (1999). "Commentary on: "Industrial Pricing: Theory and Managerial Practice"," *Marketing Science*, 18 (3), 455-57.

- Day, George S. and David B. Montgomery. (1999). "Charting New Directions for Marketing," *Journal of Marketing*, 63 (Special Issue), 3-13.
- Diamantopoulos, Adamantios. (1991). "Pricing: Theory and Evidence-A Literature Review." In M.J. Baker (ed.), *Perspectives on Marketing Management*. Chicester: John Wiley and Sons.
- Dutta, Shantanu, Mark Zbaracki, and Mark Bergen. (2001). "Pricing Process as a Capability: A Case Study," Marketing Science Institute Working Paper, No. 01-117. Cambridge, MA: Marketing Science Institute.
- Foxall, Gordon. (1972). "A Descriptive Theory of Pricing for Marketing," *European Journal of Marketing*, 6 (3), 190-4.
- Frambach, Ruud T., Ed J. Nijssen, and H. Van Heddegem (1997). "Industrial Pricing Practices and Determinants in Two Sectors." In: Hartline and Thorne (eds.). *Marketing Theory and Applications, AMA Winter Educators' Conference Proceedings, Vol. 8*. Chicago: American Marketing Association, 126-33.
- Gatignon, Hubert and Jean-Marc Xuereb. (1997). "Strategic Orientation of the Firm and New Product Performance," *Journal of Marketing Research*, 34 (February), 77-90.
- Gijsbrechts, Els. (1993). "Prices and Pricing Research in Consumer Marketing: Some Recent Developments," *International Journal of Research in Marketing*, 10, 115-51.
- Hague, D.C. (1971). *Pricing in Business*. London: George Allen & Unwin Ltd.
- Hair, Joseph F. Jr., Rolph E. Anderson, Ronald L. Tatham, and William C. Black (1995). *Multivariate Data Analysis with Readings*. Upper Saddle River, NJ: Prentice Hall.
- Henard, David H. and David M. Szymanski. (2001). "Why Some New Products Are More Successful Than Others," *Journal of Marketing Research*, 38 (August), 362-75.

- Homburg, Christian and Christian Pflesser. (2000). "A Multiple-Layer Model of Market-Oriented Organizational Culture: Measurement Issues and Performance Outcomes," *Journal of Marketing Research*, 37 (November), 449-62.
- Irwin, Julie R. and Gary H. McClelland. (2001). "Misleading Heuristics and Moderated Multiple Regression Models," *Journal of Marketing Research*, 38 (February), 100-9.
- Kline, Rex B. (1998). *Principles and Practice of Structural Equation Modelling*. New York: Guilford Press.
- Monroe, Kent B. (1990). *Pricing: Making Profitable Decisions*. New York: McGraw-Hill.
- Monroe, Kent B. and Tradib Mazumdar. (1988). "Pricing-Decision Models: Recent Developments and Opportunities." In Timothy M. Devinney (ed.), *Issues in Pricing, Theory and Research*. Lexington, MA: Lexington, 360-88.
- Nagle, Thomas T. and Read K. Holden. (1995). *The Strategy and Tactics of Pricing: A Guide to Profitable Decision Making*. Englewood Cliffs, NJ: Prentice Hall.
- Noble, Peter M. and Thomas S. Gruca. (1999a). "Industrial Pricing: Theory and Managerial Practice," *Marketing Science*, 18 (3), 435-54.
- Noble, Peter M. and Thomas S. Gruca. (1999b). "Response to the Comments on "Industrial Pricing: Theory and Managerial Practice"," *Marketing Science*, 18 (3), 458-59.
- Oxenfeldt, Alfred R. (1973). "A Decision-Making Structure for Price Decisions," *Journal of Marketing*, 37 (January), 48-53.
- Pashigian, B. Peter (1998). *Price Theory and Applications*. New York: Irwin/McGraw-Hill.

- Pearce, I.F. (1956). "A Study in Price Policy," *Economica*, 23 (May), 114-127.
- Piercy, Nigel. (1981). "British Export Market Selection and Pricing," *Industrial Marketing Management*, 10, 287-97.
- Rao, Vithala R. (1984). "Pricing Research in Marketing: The State of the Art," *Journal of Business*, 57 (1), S39-60.
- Schoonhoven, Claudia Bird. (1981). "Problems with Contingency Theory: Testing Assumptions Hidden within the Language of Contingency "Theory"," *Administrative Science Quarterly*, 26, 349-77.
- Shapiro, Benson P. and Barbara B. Jackson. (1978). "Industrial Pricing to Meet Customer Needs," *Harvard Business Review*, 56 (November-December), 119-27.
- Tellis, Gerard J. (1986). "Beyond the Many Faces of Price: An Integration of Pricing Strategies," *Journal of Marketing*, 50 (October), 146-60.
- Tzokas, Nikolaos, Susan Hart, Paraskevas Argouslidis, and Michael Saren. (2000). "Industrial Export Pricing Practices in the United Kingdom," *Industrial Marketing Management*, 29, 191-204.
- Udell, Jon G. (1972). *Successful Marketing Strategies in American Industry*. Madison: Mimir.
- Ward, Scott and Frederick, E. Webster Jr. (1991). "Organizational Buying Behavior," in Thomas S. Robertson and Harold H. Kassrajian (eds.), *Handbook of Consumer Behavior*. Englewood Cliffs: Prentice Hall, 419-58.

Table 1: Hypotheses on the Success of Pricing Practices in Different Situations of Relative Product Advantage and Competitive Intensity^a

Pricing Practice:	Value-informed	Competition-informed	Cost-informed
Contingencies:			
High relative product advantage	1 +	2 -	3 -
High competitive intensity	4 -	5 0	6 +
High relative product advantage and high competitive intensity	7 0	8 -	9 0

^aRead: (cell 1) the higher relative product advantage, the more value-informed pricing contributes to new product performance. This formulation is in line with what Schoonhoven (1981, p. 352) calls “multiplicative” in her discussion of functional forms in contingency theory.

Table 2: Correlation Matrix of Purified Measures^a

	(1)	(2)	(3)	(4)	(5)	Number of items	Alpha
(1) Value-informed pricing						5	.81
(2) Competition-informed pricing	.01					6	.91
(3) Cost-informed pricing	.22	.04				4	.75
(4) Relative product advantage	.36	-.24	.01			3	.74
(5) Competitive intensity	.03	.34	.26	-.10		3	.73
(6) New product performance	.43	.08	.09	.23	.36	4	.79

^a: Correlations above $r = .24$ are significant at $p < .05$.

Table 3: Results of Moderating Regression Analyses (Standardized Coefficients)
Dependent variable: New Product Performance

		Product Advantage	Competitive Intensity	Product Advantage and Competitive Intensity
<u>A. Simple effects:</u>				
Value-informed pricing	.39 ^a	.56 ^a	.28 ^b	.47 ^a
Competition-informed pricing	-.02	-.04	.03	.06
Cost-informed pricing	-.09	.07	.06	.03
Product advantage	.12	.16 ^d	.17 ^c	.29 ^b
Competitive intensity	.39 ^a	.30 ^b	.36 ^b	.26 ^c
Product advantage * competitive intensity				-.29 ^b
<u>B. Interaction effects of product advantage with:</u>				
Value-informed pricing		.32 ^b		
Competition-informed pricing		-.27 ^b		
Cost-informed pricing		.03		
<u>C. Interaction effects of competitive intensity:</u>				
Value-informed pricing			-.29 ^b	
Competition-informed pricing			-.07	
Cost-informed pricing			.16 ^d	
<u>D. Interaction effects of product advantage * competitive intensity, with:</u>				
Value-informed pricing				-.08
Competition-informed pricing				-.28 ^c
Cost-informed pricing				.22 ^c
df	71, 5	68, 8	68, 8	67, 9
F	6.92 ^a	7.64 ^a	5.92 ^a	6.64 ^a
Adjusted R ²	.28	.41	.34	.40

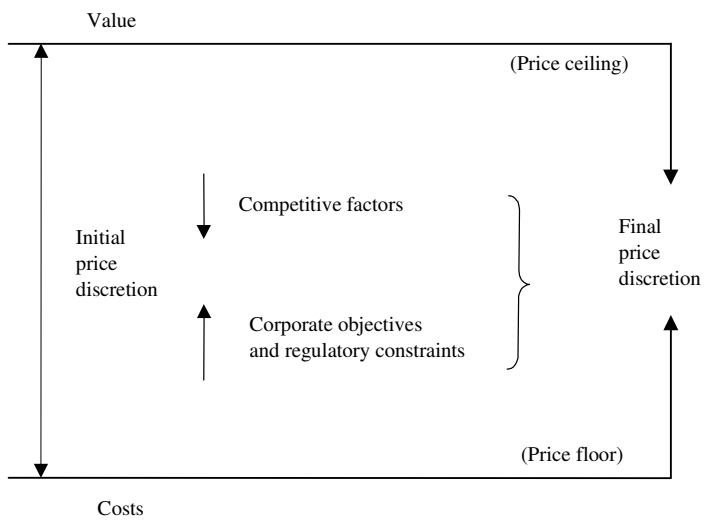
a: p < .001 (one-tailed significance)

b: p < .01

c: p < .05

d: p < .1

Figure 1: Conceptual Orientation to Pricing



Based on Monroe (1990)