DEMAND METHODS OF PRICE MANAGEMENT: AN EMPIRICAL RESEARCH

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ABSTRACT

One factor which companies often take as a reference point for their pricing decisions is demand. This, however, is often done only partially, with priority being given to quantitative factors rather than qualitative factors. In this context, the aim of this study was to supply companies with a tool to facilitate and enhance price management in areas related to demand.

In order to achieve this objective, the following procedure was implemented. Firstly, an extensive review of existing literature was carried out. This has made it possible to identify a set of factors which can influence consumer behaviour with respect to prices, and which should therefore be taken into account when making pricing decisions.

The factors identified were then grouped into several categories (variables related to price, variables related to the product, variables related to the characteristics and the behaviour of the consumer, and variables related to the context of the purchase), in order to offer an overall, linked view.

An empirical study was then carried out, interviewing price managers in a selection of companies from Andalusia (Spain). The objective was to gather data on their methods of price management, and to evaluate the practical usefulness of the sets of factors identified.

The results of the study have made it possible to draw some interesting conclusions on price management. One of these is the importance which companies attach to pricing decisions. These decisions were taken in all cases by higher management teams.

However, on analysing the factors which intervene in pricing decisions, it has been observed that their number is limited. In general, cost is still the major factor, while demand-related aspects, in particular qualitative aspects, play a secondary role.

On investigating the reasons for the priority given to quantitative rather than qualitative data, interviewees basically gave two answers. On the one hand, quantitative information (costs and sales) is easier to obtain, use and interpret than qualitative information (motivation, perception and attitude). On the other hand, most companies, and in particular the smaller ones, have no budget available for qualitative market studies.

There may be a third reason for this behaviour, which was not explicitly mentioned at first by interviewees. This is the lack of knowledge regarding qualitative demand factors: their nature, their meaning, their usefulness and the way in which they can be incorporated into pricing decisions.

This study is a first step towards solving this deficiency, since it proposes a chart which contains numerous restrictions in an integrated, organised fashion. Logically, it would be impractical to take them all into account simultaneously. This is where the work of each company begins, using market studies to establish priorities between the different factors.

THEORETICAL FOUNDATION

Establishing and changing the sale price of a product is an extremely complex multidisciplinary process involving production, finance, legal and marketing considerations (Cebollada and Múgica, 1997; Díez and Rosa, 2004; Monroe, 1992; Walser-Luchesi, 1998).

One factor which companies often take as a reference point for their pricing decisions is demand. This, however, is often done only partially, with priority being given to quantitative factors -sales forecasts for every possible price level: consumer price elasticity-rather than qualitative factors -those which generate specific consumer reactions to price-(Conover, 1989; Cova and Salle, 1997; Monroe and Della Bitta 1978; Narasimhan, 1984; Otero, 1999; Rosa, 2002, 2003a; Solé, 1999).

The main reasons for this are the practical difficulties and the cost involved in using these qualitative aspects in real-life decisions (Díez and Rosa, 2004; Monroe and Mazumdar, 1988; Pelé, 1992; Rosa 2001).

Although price elasticity of demand is useful in price management, companies must also bear in mind its limitations (Andréani, 1997; Neslin and Shoemaker, 1983; Ölander, 1969; Sampson, 1969; Simon, 1989; Winkler, 1995):

- (a) Elasticity can only be observed after the fact.
- (b) Its usefulness as a forecasting tool depends on the extent of any changes in the specific conditions and situations in which it was calculated.
- (c) (c) It is important not only to identify the sensitivity of demand to price variations, but to know how to respond to this sensitivity in order to fulfil objectives.

These limitations make it advisable to complement elasticity studies with other research based on behavioural science (Bearden and Urbany, 1998; Greenleaf, 1995; Hauser, 1984; Monroe and Mazumdar, 1988; Olshavsky et al., 1995; Rao et al., 2000).

Although there is a relatively large amount of research in this area, the real problem is the lack of connection between the different studies (Rosa, 2001, 2003b).

In this context, the aim of this study was to supply companies with a tool to facilitate and enhance price management in areas related to demand. Price managers have specifically mentioned the importance of having this type of tool available (Gijsbrechts, 1993; Oubiña, 1997; Pelé, 1992; Rosa, 2002, 2003b; Woodruff, 1997).

In order to achieve this objective, the following procedure was implemented:

Firstly, an extensive review of existing literature was carried out, including major studies in recent decades analysing consumer behaviour with respect to prices. This has made it possible to identify a set of factors which can influence this behaviour, and which should therefore be taken into account when making pricing decisions.

The factors identified were then grouped into several categories in order to offer an overall, linked view.

An empirical study was then carried out, interviewing price managers in a selection of companies from Andalusia (Spain). The objective was to gather data on their methods of price management, and to evaluate the practical usefulness of the sets of factors identified.

Finally, the main conclusions are presented. The limitations of the study are also described, as are future lines of research.

FACTORS INFLUENCING PERCEPTIONS AND THE EVALUATION OF PRICES

The perception of a price may be defined as the process by which consumers transform price signals into meaningful cognitive structures (Conover, 1989; Zeithaml, 1988; Rosa, 2001). This process is made up of several stages (Figure 1):

- (1) The cognitive stage (the encoding of the objective price and the storage of the psychological price).
- (2) The affective stage (the attitude towards the psychological price).
- (3) The behavioural stage (the response to the price).

This study focuses on the cognitive phase, specifically on the stage involving codification, interpretation and the assignment of meaning to the objective price, which result in the creation of a psychological price.

As mentioned in the previous section, the first step of the present study was to identify those items which determine consumers' perception of prices. To this end, an extensive review of existing literature was carried out.

This made it possible to verify, firstly, that the way in which consumers perceive prices depends on a very large number of factors. In order to provide an overview, the factors identified were first grouped into four general categories:

- (1) Variables related to price (Ferrari and Loza, 2005; Guido and Peluso, 2004; Lehmann, 2004; Miyazaki et al., 2000; Rosa, 2001a, 2002).
- (2) Variables related to the product (Bell and Bucklin, 1999; Desai and Hoyer, 2000; Estelami et al., 2001; Mussweiler and Strack, 2004).
- (3) Variables related to the characteristics and the behaviour of the consumer (Gentry et al., 2003; Vaidyanathan, 2000; Vermeir and Van Kenhove, 2005).
- (4) Variables related to the context of the purchase (Chandrashekaran, 2004; Urbany et al., 2000; Wathieu, 2004).

In turn, and within each of these four general categories, more specific subgroups were defined. The general categories, the subgroups and the specific factors are shown in Table 1.

Table 1
Grouping of factors which determine the sensitivity of demand to prices

GENERAL CATEGORIES	SUBGROUPS	SPECIFIC FACTORS	
Price of the product	Objective price	Price levels. Competitor prices. Magnitude of price differences. Variability of prices. Available information on prices. Expenses associated with the purchase of the product. Cost of changing providers.	
	Consumers' knowledge of prices	Accuracy of consumers' price knowledge.	

		Association between price and quality.
		Adaptation levels and reference prices.
	Consumers' evaluations of	Assimilation-contrast effects.
	evaluations of prices	Acceptable price intervals.
	-	Reference prices.
	Consumer attitudes towards prices	Price image of store.
		Perceived usefulness/value of money.
		Importance of the economic sacrifice in the
		purchase.
		Reasons associated with price changes.
	Objective characteristics	Nature of the good (tangible or intangible).
		Product category.
		Degree of differentiation among products.
Product		Number and characteristics of substitute products.
	Subjective	Use given to the product and context of use.
	characteristics	Difficulty in evaluating product quality.
	(consumer	Difficulty in comparing purchase options.
	evaluations)	Perception of unique benefits.

		Time availability.
		Budgetary restrictions.
		Percentage of the total budget that the expense
	Characteristics	represents.
		Experience.
		Person assuming the expense.
		Final user.
Classical distribution		Demographic characteristics.
Characteristics and behaviour of		Spending patterns.
the consumer	Behaviour	Loyalty to the product/brand.
		Importance given to the reputation of the
		company or the store.
		Personal implication.
		Risks associated with the purchase.
		Confidence in the seller.
		Self-confidence.
		Attempt to obtain social recognition, quality,
		cognitive consistency, convenience or savings.
		Effectiveness of sales force.
		Nature, frequency and framework of promotions.
Context of the	Factors related to	Importance of after-sales service.
purchase	the store	Price image of the point of sale.
		Service image of the point of sale.
		Information provided in the point of sale.
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	Other factors	Means of payment.
	Complexity and magnitude of the purchase.	

The first conclusion that can be reached is that pricing decisions based on demand should incorporate very diverse factors. The number of factors should be large enough to reflect the different categories and aspects identified. However, at the same time, the number of factors should not be too large, or the decision chart will no longer be of practical use. It is necessary to strike a balance.

To do this, each company should analyse its own market and environment, know its clients, and apportion a weighting to those factors which condition the behaviour and the reactions to prices of present and potential clients. This is the key to deciding which of these factors should form part of pricing decisions.

To sum up, in order to take qualitative aspects of demand into account when making pricing decisions, the first step is to identify those aspects and how they are structured and interrelated, and their importance in each company's specific market. This study makes a contribution to the first two points; the remaining issue must be answered by each company, for its own individual situation, by means of qualitative market studies.

EMPIRICAL STUDY

Design

The next stage of the research was to test the usefulness of the analysis chart proposed in the previous section and to gather additional information in order to perfect it.

To do this, fifteen private companies in the food sector (all of wich were based in Andalusia, Spain) participated in the study. Of these, three had less than 20 workers, four had between 20 and 100, another four had between 100 and 500 and the remaining four companies had more than 500 workers.

To collect information, the persons responsible for setting prices in these companies were interviewed. The interview method was that designed by Pelé (1992). The questionnaire used was made up of three separate sections.

The first part contained data identifying the company and the person interviewed (the price manager).

The second part contained questions on the process used for setting prices in each company. Specifically, the interviewees were asked about the factors they take into account when making pricing decisions (they were asked to indicate between one and four factors, in order of importance).

The third section was used to gather the opinion of the interviewees on the analysis tool presented in this study, and on its usefulness and possible improvements.

Results

One result of note is the position inside the company of the 15 people responsible for price management who were interviewed. This information is shown in Table 2:

Table 2
Positions of those responsible for price management

Size of the company	Positions
Less than 20 employees	General manager. Decisions were taken by a single person (2 companies). Sales manager. Decisions were taken by a small group of people in the sales department (1 company).
Between 20 and 100 employees	General manager. Decisions were taken by a single person (1 company). Sales manager. Decisions were taken by a single person (1 company). Sales manager. Decisions were taken by a small group of people in the sales department (2 companies).
Between 100 and 500 employees	General manager. Decisions were taken by a group of people from different areas of the company (1 company). Sales manager. Decisions were taken by a group of people

	in the sales department (1 company).
	Sales manager. Decisions were taken by a group of people
	from different areas of the company (1 company).
	Technical manager. Decisions were taken by a group of
	people from different areas of the company (1 company).
	General manager. Decisions were taken by a group of
	managers from different areas of the company (2
More than 500 employees	companies).
More than 500 employees	Sales manager. Decisions were taken by a group of
	managers from different areas of the company (2
	companies).

As can be seen, in this study, pricing decisions are made principally by the general manager and the sales manager, whatever the size of the company (number of employees). There was only one case in which this task was done by the technical manager.

Furthermore, the larger the company, the more participative was price management. That is, in the smaller companies, pricing decisions were taken by a single person or by a small group of people in the sales department. However, in the larger companies (more than 100 employees), it was more common for this responsibility to be shared by a larger group of people from different areas of the company.

According to the interviewees, the aspects which most influenced pricing decisions, are those shown in table 3:

Table 3
Factors considered in pricing decisions

Size of the company (employees)	Positions of the responsible for price management	Factors*
Less than 20 employees	General manager (single person) Sales manager (group of people in the sales department)	1°. Costs 2°. Competition 1°. Costs 2°. Past sales figures 3°. Competition
Between 20 and 100 employees	General manager (single person) Sales manager (single person)	1°. Costs 2°. Competition 1°. Past sales figures 2°. Costs 3°. Competition
	Sales manager (group of people in the sales department)	1°. Costs 2°. Past sales figures 3°. Qualitative market studies 4°. Competition
Between 100 and 500 employees	General manager (group of people from different areas)	1°. Costs 2°. Past sales figures 3°. Qualitative market studies 4°. Competition

	Sales manager (group of people in the sales department)	1°. Costs2°. Past sales figures2°. Qualitative market studies3°. Competition
	Sales manager (group of people from different areas)	1°. Costs2°. Past sales figures3°. Qualitative market studies4°. Competition
Technical manager (group of people from areas)	(group of people from different	1°. Costs 2°. Past sales figures 3°. Qualitative market studies 3°. Competition
More than 500	General manager (group of managers)	1°. Costs 2°. Past sales figures 3°. Qualitative market studies 4°. Competition
employees	Sales manager (group of managers)	1°. Costs2°. Qualitative market studies3°. Past sales figures4°. Competition

^{*} The order of importance is based on the average score given to each factor by the companies making up the groups defined by the variables "company size" and "functions of the price manager".

The above data shows that the determining factors for pricing decisions in the companies participating in this study are basically costs, demand (quantitative and qualitative aspects) and the competition. Costs are the most important, independently of the size of the

company or the functions of the price manager. These results are in line with those obtained in previous studies (Pelé, 1992; Rosa, 2001).

The size of the company and the functions of the price manager do seem to influence the importance of the remaining factors (demand and competition). Specifically, in the smaller companies (less than 100 workers), the two restrictions appearing together with costs were competition and quantitative demand (sales).

Furthermore, the relative importance of competition and demand changed depending on whether the person responsible for the decisions was the general manager (competition more important than demand) or the sales manager (demand more important than competition).

Finally, in the smaller companies, the qualitative aspects of demand were only taken into account when pricing decisions were taken by a group from the sales department.

The situation was different in the larger companies (more than 100 workers). In these cases, the replies followed the same pattern: the priority restriction was still cost, with demand in second place, followed by competition.

Among the demand factors, both quantitative and qualitative aspects were mentioned. In general, greater importance was also placed on quantitative than qualitative information, independently of the functions of the price manager and the make-up of his/her team. The only exception was in the two companies with over 500 workers in which price management was the responsibility of the sales manager. In both these cases, priority was given to qualitative market studies rather than past sales figures.

In summary, these results show that demand factors, particularly those of a qualitative nature, are more important in the pricing decisions of larger companies, and in those cases where these decisions are essentially taken by people connected with sales.

The next step in the empirical study was to ask interviewees about two issues connected with demand factors:

- (1) Why did they attach more importance to quantitative rather than qualitative aspects? (In the two cases in which the opposite answer was given, interviewees were also asked why).
- (2) What specific aspects are analysed in qualitative market studies? The answers obtained for the first question are shown in Table 4.

Table 4
Importance of demand
Reasons given by interviewees

More importance given to quantitative	More importance given to qualitative	
aspects	aspects	
Easier to obtain.	The information is specific to the	
■ Cheaper to obtain.	company's market.	
 More objective, more reliable. 	 Helps in understanding consumers and 	
Easier to understand.	forecasting their future behaviour.	
May be used in calculations.	■ The information is up-to-date.	

As can be seen, the reasons for prioritising quantitative aspects of demand in pricing decisions were lower costs, the ease with which they can be obtained and used and the objectivity of the figures. In the two cases in which priority was given to qualitative aspects, more importance was attached to obtaining information about why consumers behaved as they did with regard to prices.

With respect to the second question, the specific aspects analysed in qualitative marketing studies were consumer loyalty to the product, to the brand and to the store, the importance of price in purchase decisions, the degree of knowledge about the product and questions related to family purchasing roles (who takes purchasing decisions and who actually buys the products sold by the company). These were very simple studies, involving little planning, and based fundamentally on low-budget surveys with small sample sizes.

In the two cases in which qualitative aspects were considered more important than quantitative factors, the following were added to the list of qualitative aspects: association between price and quality and price and quality image of brands and stores. The studies were also better designed, the consumer samples were larger and the data gathering techniques were more varied; logically, budgets were higher than was the case for the other companies participating in this study.

The last step in the empirical study entailed presenting the interviewees with the analysis chart shown in Figure 1. They were asked for their reactions, whether it would be

useful in their pricing decisions, and what changes they could suggest. Several conclusions were drawn from the discussions.

On the one hand, all interviewees found the idea quite interesting, basically because it gave them a clear, complete view of many factors which they sometimes guessed at but could not clearly identify.

In addition, there were many items which they had not even thought of analysing before (they did not include them in their pricing decisions) because, quite simply, they were unaware of them.

Indeed, pricing decisions were normally based exclusively on data on costs, own sales and competitors' sales and price levels.

Another thing they found useful was the way the factors were structured in the chart, since this made it easier to establish priorities between them and to design specific studies.

Finally, a major problem for most of those interviewed was the difficulty in taking pricing decisions based on qualitative information. The first hurdle was information gathering itself, which requires the use of instruments and statistical techniques with which they were not fully conversant. The second disadvantage was the difficulty of including this qualitative information in specific pricing decisions.

DISCUSSION AND MANAGERIAL IMPLICATIONS

The results of the study have made it possible to draw some interesting conclusions on price management.

One of these is the importance which companies attach to pricing decisions. These decisions were taken in all cases by higher management teams, and in no case was responsibility delegated to middle management.

However, on analysing the factors which intervene in pricing decisions, it has been observed that their number is limited. In general, cost is still the major factor, while demand-related aspects, in particular qualitative aspects, play a secondary role.

This is a paradoxical situation: if pricing decisions are so important that they must be taken at upper management level, they should be more solidly based. In addition to costs, sales and the activities of competitors, they should include other elements which help to

understand the behaviour of consumers with regard to prices. This study proposes an analysis chart to help in this task.

In the specific case of demand factors, the prioritisation of historic sales data means taking the results of past consumer behaviour to predict future behaviour. But, except for the product price itself, the reasons for this behaviour are not being taken into account. The only tool, then, being used to influence the future behaviour of consumers is one single stimulus: price.

However, the inclusion of qualitative demand aspects in pricing decisions means that the reasons for past behaviour are being taken into account, and forecasts of future behaviour are viewed as the result of different stimuli: price, value for money, perception of quality and service, etc.

On investigating the reasons for the priority given to quantitative rather than qualitative data, interviewees basically gave two answers. On the one hand, quantitative information (costs and sales) is easier to obtain, use and interpret than qualitative information (motivation, perception and attitude). On the other hand, most companies, and in particular the smaller ones, have no budget available for qualitative market studies.

There may be a third reason for this behaviour, which was not explicitly mentioned at first by interviewees. This is the lack of knowledge regarding qualitative demand factors: their nature, their meaning, their usefulness and the way in which they can be incorporated into pricing decisions.

This study is a first step towards solving this deficiency, since it proposes a chart which contains numerous restrictions in an integrated, organised fashion. Logically, it would be impractical to take them all into account simultaneously. This is where the work of each company begins, using market studies to establish priorities between the different factors.

This is also where researchers face an important challenge: companies need specific instruments which will enable them to identify and understand the behaviour of consumers with regard to the prices of their products, and to use this information to inform their pricing decisions; only then will they be able to expand their frame of reference when taking pricing decisions.

These expanded systems are particularly useful for tasks such as the formulation of segmentation strategies based on different consumer price sensitivities, the design of actions

aimed at influencing sensitivity in each market and the identification of acceptable price ranges.

LIMITATIONS AND FUTURE RESEARCH

This study began with an extensive review of the available literature, and so is solidly based. However the empirical research is based on a small sample of companies in a single sector, the food sector. This is a clear limitation for the interpretation of the results obtained, but at the same time opens several lines of future research.

One of these is to increase the number of companies participating in the study. This would make it possible to search for statistical relationships between the different variables under study (the functions of the price manager, the participatory nature of the price manager's decisions, which factors intervene in those decisions, and the company size).

It would also be interesting to expand the experimental chart, including other areas of activity and other company characteristics in the analysis: turnover, technological complexity, the spread of the product range, market positioning, and general aims and pricing objectives (Mooij and Hofstede, 2002; Otero, 1999; Pelé, 1992; Rosa, 2001).

One final line of future research is targeted directly at business practice with regard to price management. The aim is to design specific, operative methods for incorporating qualitative demand factors into pricing decisions. This would make it possible to apply a more market-oriented approach to pricing, taking into account the way in which consumers perceive prices and develop perceptions of value (Gijsbrechts, 1993; Monroe and Mazumdar, 1988; Oubiña, 1997; Woodruff, 1997; Rosa, 2001, 2003b).

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