Journal of Product & Brand Management

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Hans H. Stamer, Hermann Diller

Article information:

To cite this document: Hans H. Stamer, Hermann Diller, (2006), "Price segment stability in consumer goods categories", Journal of Product & Brand Management, Vol. 15 Iss: 1 pp. 62 - 72

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Price segment stability in consumer goods categories

Hans H. Stamer and Hermann Diller

Marketing Department, University of Erlangen-Nürnberg, Nürnberg, Germany

Abstract

Purpose – This paper sets out to explore the degree to which consumer price segments can be generalized across product categories.

Design/methodology/approach – A comprehensive segmentation framework of price-related activating and cognitive inner processes and preferences is proposed to account for heterogeneity in consumer response to price. Large-scale consumer survey data on price-related attitudes in eight consumer goods categories (paper tissue, soap bar, chocolate bar, detergent, facial moisturizer, television set, washing machine, jeans) are used for cluster analysis.

Findings – On the aggregate level, five stable price segments across consumer goods categories are identified and described. On the individual level, it is found that price behavioural consistency is a function of the category context in terms of price uncertainty and quality uncertainty.

Practical implications – The findings suggest that price management should be concerned with price segment structures and their specific price needs. Price segmentation could particularly benefit retailers in order to increase the effectiveness and efficiency of consumer targeting.

Originality/value – The contribution of the study is to show that identical price segments can be identified across categories, whereas the individual segment membership depends on the nature and level of perceived risk in the category.

Keywords Product management, Pricing, Consumer behaviour, Market segmentation

Paper type Research paper

Introduction

Price segmentation captures response heterogeneity to price-related variables and creates opportunities to adapt price management to segment-specific price behaviour for enhanced pricing effectiveness and efficiency. While considering price behaviour a personality trait, the product category itself is observed as a determinant (Gabor and Granger, 1964; Erdem *et al.*, 2002). This may be due to the distribution of quality uncertainty and price uncertainty in a product category. Whereas quality uncertainty is concerned with the distribution of intrinsic product quality, price uncertainty is defined as a situation where a consumer is uncertain about the prevailing prices for the products of an expected quality level (Mehta *et al.*, 2003). From a risk theory perspective, price behaviour is part of a set of risk-handling strategies to reduce probability and/or importance of losses due to uncertainty (Roselius, 1971; Grottel and Mitchell, 1994; Cases, 2002). Households may search a lot for price information and focus on low prices in some categories to reduce financial risk. At the same time they may have high reservation prices in other product categories. This phenomenon is also referred to as “hybrid” behaviour

(Schmalen, 1994, p. 1222; Diller *et al.*, 2000; Meer 1995). Using extent survey data on price behaviour in eight product categories, the purpose of this study is to assess price segment stability across the categories investigated. Three common factors are identified from a comprehensive set of price-related indicators and subsequently used for cluster analysis. The five segments “brand conscious buyers” (BCB), discount buyers” (DB), optimizers” (O), high price shoppers” (HPS) and “price seekers” (PS) prove stability across categories and give some indication for management implications.

Measuring price behaviour with psychographics

Building upon the conceptual S-O-R-paradigm for discussing shopper reactions to price (Zeithaml, 1984; Jacoby and Olson, 1977), we differentiate activating and cognitive processes that determine the shopper’s willingness to pay (Diller, 1978). The segmentation framework of this study recurs to three areas of key constructs to cover each of the psychological processes: value consciousness, price perceptions and price intentions.

Value consciousness

“Value consciousness” is the main activating construct. Defined as “the need to collect and consider price information for brand choice” (Diller, 2000, p. 113), it is differentiated into three distinct components (Ailawadi *et al.*, 2001; Diller, 2000): “concern for price”, “relevance of alternatives” and “price search”. The first component, “concern for price”, measures the importance of price relative to other shopping orientations (Zeithaml, 1984). Second, the indicator “relevance of alternatives” in product

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Journal of Product & Brand Management
15/1 (2006) 62–72
© Emerald Group Publishing Limited [ISSN 1061-0421]
[DOI 10.1108/10610420610650882]

choice (Diller, 2000) mirrors variety seeking behaviour as “a motivation in and on itself” (McAlister and Pessemier, 1982, p. 314) and is positively correlated with price sensitivity (Helmig, 1997). Lastly, “price search” indicates the extent to which consumers are motivated to gather, perceive and store price information (Diller, 2000).

Price perceptions

The concept of “price perception” encodes related cues into subjective categories of internal reference points for storage (Monroe, 1973). Based on Helson’s (1964) adaptation-level theory, “normal price estimates” as well as “upper and lower price thresholds” anchor the shopper’s judgment with respect to an objective price within its specific purchase environment and determine ultimately brand choice (Urbany and Dickson, 1991; Monroe, 1971; Diller, 1978).

Price intentions

Finally, “price intentions” reflect an attitudinal disposition to consistently respond to price cues. Their main components are “willingness to pay” (Werthenbroch and Skiera, 2002), deal proneness” (Blattberg and Neslin, 1990), price as a quality indicator” (Leavitt, 1954; Rao and Monroe, 1989) and “price reliance, the latter referred to as the “shopper’s expectation a retail store/firm set a fair price” (Diller, 2000, p. 181).

Consumer price behaviour appears to be affected by different degrees of purchase involvement (Richins and Bloch, 1986). In situations where probability and importance of losses are high, consumers will perceive high purchase involvement and may adapt their price behaviour to reduce risk to an acceptable level. At the same time, price behaviour accounts for the salience of price uncertainty or quality uncertainty to the extent that price information and quality information may have different utility depending on the importance shoppers attach to price versus quality in a product category (Tellis and Gaeth, 1990). We therefore challenge the proposition of choice context-independent price segments with the selection of eight consumer goods categories. Most studies on price behaviour restrict the analysis to one product category. Some cross category research gives evidence of the product itself as determinant of price behaviour (e.g. Mazumdar and Papatla, 2000). Our price segmentation approach across eight product categories delivers some evidence that segment-specific price behaviour can be generalized across categories, although segment-membership varies on the individual level.

Method

To this end, a representative survey on German households’ price behaviour in five fast-moving consumer goods (tissue, chocolate bar, soap bar, detergent and facial moisturizer) and three durable goods categories (washing machines, television sets and jeans) was conducted in April 2002 in cooperation with GfK/IRI, Nürnberg, Germany. The product categories selected feature substantial differences with respect to quality uncertainty, price uncertainty, financial risk and familiarity with the purchase situation. Table I gives evidence for the category heterogeneity desired.

In situations where price variability is high, consumers perceive high price uncertainty. Quality uncertainty is assessed with the indicator “perception of quality differences” in the product category. Further, familiarity as

a function of purchase frequency should reduce the household’s perception of price and quality uncertainty. Finally, the higher the product price the higher the motivation to use risk-handling strategies. Therefore, consumers are expected to have a lesser need to collect and reconsider information for brand choice in familiar purchase situations or where financial risk is perceived to be low (Richardson *et al.*, 1996).

A total of 2,621 buyers responded to a set of 16 items on price-related behaviour for segmentation. Socio-demographics and a range of general attitudes were also collected for cluster description. The set of price items accounts for the above described segmentation framework and intends to comprehensively cover the inner processes of consumer reaction to price. More specifically, we focussed on the four areas of “value consciousness”, “deal proneness”, “willingness-to-pay”, “price reliance” and “price as a quality indicator”. Note that one indicator of “value consciousness”, “concern for price”, was inversely reflected with two measures as “concern for quality” and “concern for brands” to avoid a social desirability bias. Further, one item to assess quality uncertainty was included. The items are given with scaling details in Table II[1]. The sample was divided into four sub-groups of two products each, leading after elimination of outliers to a total of 5,087 buyer-product combinations.

The nature of our data analytical approach is exploratory. Factor analysis is computed for the total market and each product category to explore common factor structures. Composite scores are subsequently calculated as standardized means of the high-loading measures. The composite scores provide an estimate of the corresponding constructs used for segmentation. Cluster analysis of the scores is performed using the Ward-method to compute starting values for alternative numbers of clusters as input for K-means clustering (Punj and Stewart, 1983).

To determine the optimal number of clusters retained for each product category, four criteria were assessed. Bacher (1996) suggests two decision criteria based on explained variance: First, ETA^2 computes the share of the total variance explained by the clusters, whereas the second measure PRE^2 is the expression of the additional variance explained resulting from the increase in number of clusters. PRE^2 should exceed a minimum value of 0.15 to justify the separation of a further cluster (Bacher, 1996). The criteria are written as:

$$ETA_K^2 = 1 - \frac{SQ_{in}(K)}{SQ_{ges}}$$

and

$$PRE_K^2 = 1 - \frac{SQ_{in}(K)}{SQ_{in}(K-1)}$$

with K = number of clusters; SQ_{in} = variance within clusters, SQ_{ges} = total variance. Third, F -values reflect the degree of homogeneity, and finally, t -values are analysed to assess cluster heterogeneity.

The index of interrater reliability κ , kappa (Cohen, 1960), is used to investigate segment stability across categories. Values of κ greater than 0.74 are considered to indicate excellent reliability, values from 0.60 to 0.74 are considered good, values from 0.40 to 0.59 are considered fair, and values below 0.40 are considered poor (Meyer *et al.*, 2002; Fleiss,

Table I Product category heterogeneity

	Paper tissue	Chocolate bar	Soap bar	Detergents	Facial moisturizer	Jeans	Television set	Washing-machine
<i>Quality uncertainty</i>								
Quality differences	2.35	1.78	2.47	2.45	1.84	1.84	1.73	1.71
<i>Price uncertainty</i>								
Price span	1.39	2.88	6.48	3.43	10.70	197.01	7398.94	2110.27
% sold on deals (base: purchases)	6.7	11.0	5.7	29.6	10.8	38.0	63.2	66.1
<i>Financial risk</i>								
Consumer average price (€)	1.97	1.27	1.17	5.72	6.54	49.02	187.73	605.54
<i>Familiarity</i>								
Av. purchase frequency	5.3	23.4	4.4	5.7	4.3	1.4	Average usage cycle: 11.4 years	Average usage cycle 12.9 years

Notes: Scale description: Quality differences: a five-point Likert-type scale measuring the degree to which a shopper agrees with the item, with 1 = strongly agree ... to 5 = strongly disagree; Price span = absolute price difference between maximum and minimum consumer price in the category (in €)

Source: GfK/IRI household panel data 2003

Table II Table of dimensions and scales

Dimensions	Scales
Value consciousness	
Concern for price	"When purchasing X, quality is more important than price." (inverse concern for price) "When thinking of purchasing X, the brand is more important than price." (inverse concern for price)
Relevance of alternatives	"When purchasing X, I consider a large number of alternative brands."
Price search	"Prior to purchasing X, I collect a large amount of information on price, i.e. via comparing prices in store or searching for deals."
Willingness to pay	
Reservation price	"What is the maximum price you would be prepared to pay for X?"
Normal price estimate	"What is the price you would normally pay for X?"
Upper threshold	"What is the price you would consider expensive for X?"
Lower threshold	"What is the price you would consider cheap for X?"
Price intentions	
Price reliance	"In X, firms usually set fair prices."
Price as quality indicator	"In X, very low prices may indicate low quality." "When paying a higher price for X, you generally get a better quality."
Deal proneness	"When purchasing X, I consider special offers for brands in the store." "If there is a special offer for a brand in X, I may spontaneously purchase this brand." "When purchasing X, I am prepared to put some effort into looking for special offers for a brand."
Quality uncertainty	"X is a product where quality differences are high"
Sociodemographics	Age, Education, Marital Status, Number of Children in the Household, Income, Professional Status
General attitudes	"It is important to achieve more than others." (career orientation) "Sometimes, I find it difficult to adapt to new situations." (risk aversion 1) "In the advent of important events, I doubt everything will be running smoothly." (risk aversion 2) "One has never enough time to do everything one should do." (time pressure) "Usually, I belong to those who buy a new product as soon as it is on the market." (innovativeness)

Notes: Scale description: a five-point Likert-type scale measuring the degree to which a shopper agrees with the item, with 1 = strongly agree ... to 5 = strongly disagree. Exception: the four estimates of the shopper's willingness-to-pay are measured directly (in € or DM)

1981)[2]. We use the split-half method proposed by McIntyre and Blashfield (1980) to test stability for the total market, cross-validate user classification in the product category context versus classification in the total market context and investigate hybrid behaviour analysing the user classification for each of the two product categories assigned to the four sub-samples.

Results and discussion

Factor analysis of the single items with varimax rotation results in a simple three-factor structure identical for all product categories. Note that the indicator "relevance of alternatives" was excluded from the final factor analysis because of insufficient communality with the factor structure of a previous analysis (< 0.3)[3]. The item was instead used for cluster profiling. Factor loadings and the scree-plot are reported in Figure 1 and Table III. Explained variance ranges from a low of 51.9 per cent (WMA) to a high of 65.8 per cent (PTI, see Table IV).

The identified factor structure reveals the underlying choice conflict between quality expectations and the need for lower prices which results in price tier preferences. The first factor "Concern for quality" (CQ) collects five items: "quality importance", "price as indicator of quality" (measured with the two items "high price indicating good quality" and "very low price raising concern for quality" recurring to Monroe (1973)), "brand importance" and "perception of product quality differences". In part antipode of price importance, we

Figure 1 Factor analysis – scree plot

find reliability equally confirmed for all categories with α ranging from 0.72 (WMA) to 0.86 (PTI). The purchase decision process of consumers with high concern for quality should therefore tend to be less driven by value consciousness.

Table III Factor analysis – factor loadings (total market)

	IRP	CQ	AP
CG total			
Quality importance	–0.12	0.75	–0.11
Price search	0.03	0.00	0.76
Upper price threshold	0.86	–0.10	0.04
Normal price estimation	0.93	–0.14	0.08
Lower price threshold	0.82	–0.09	0.03
Maximum willingness to pay	0.86	–0.16	0.12
Very low price, raising concern for quality	–0.08	0.78	–0.04
High price, indicating good quality	–0.09	0.73	–0.03
Price reliance	0.05	–0.07	0.48
Perception of product quality differences	–0.06	0.75	0.05
Brand importance	–0.15	0.73	–0.15
Attention to deals when purchasing	0.07	–0.14	0.83
Spontaneous purchase on deal	0.04	–0.05	0.50
Search for deals	0.03	0.04	0.77
Cronbach's α	0.90	0.81	0.71

Notes: Varimax-rotated factor analysis after elimination of two items ("relevance of alternatives" and "confidence in price knowledge")

The second factor may be best interpreted as "Attention to price cues" (AP). With the five items "deal proneness (three items)", "price search" and "price reliance" consistently attributed to this third latent variable, the vector contains a motivational aspect of value consciousness and expresses the consumer preference for deals. Reliability measurement delivers mixed results for two reasons. First, reliability is not satisfactory for washing machines (WMA, $\alpha = 0.53$) and television sets (TEL, $\alpha = 0.68$). Especially the measurement of "deal proneness" appears to be inadequate for durables with longer purchasing cycles and higher financial risk (i.e. item sa_2: "spontaneous purchase decisions on deals" are evidently less likely in such categories). Second, if the other six product categories give indication of reliability, α around 0.70 seems only acceptable at this exploratory stage.

The final factor "Internal reference price (IRP)" groups the three cognitive categories of internal reference points, "upper and lower price threshold" and "normal price estimation", as

well as the item "willingness to pay" as attitudinal disposition. It reflects in part Winer's (1988) conceptualisation of the internal reference price, a composite vector of multiple reference points[4]. Thus, shoppers are differentiated based on their subjective anchor for price judgments. With α around 0.90, reliability is confirmed for all categories.

For segmentation, composite scores were generated calculating the means of the standardized items of the three factors. Starting values for two to ten clusters were computed as input for K-means clustering using the Ward-method. Table V suggests a five-cluster solution.

The analysis of PRE² excludes cluster solutions with values of 0.10 or below. Further, explained variance (ETA²) improves from 0.29 (two clusters) to 0.61 (five clusters). The five-cluster solution is perfectly homogeneous, and the average difference of t -values still shows a noticeable improvement of cluster heterogeneity from four to five clusters. Interestingly, the level of agreement, κ , is relatively low for three or four clusters across categories, whereas five clusters show good stability for all product categories with the exception of washing machines ($\kappa_{\text{WMA}} = 0.47$), and, to a lesser extent, of the two other durable goods, television sets and jeans ($\kappa_{\text{TEL}} = 0.65$; $\kappa_{\text{JEA}} = 0.63$). Split half analysis was performed to validate the price segment structure for the total sample. With $\kappa = 0.90$ an excellent degree of agreement between the nearest-centroid assignments of the holdout sample and the results of a cluster analysis of the holdout sample can be observed.

Most importantly, the five-cluster solution makes psychological sense: Table VI gives the means of the three composite scores for each cluster. Note that high negative values for "Attention to price cues" (AP) and "Concern for quality" (CQ) read high agreement, whereas inverse interpretation is required for the "Internal reference price" (IRP). Cluster profiles of selected descriptive items are given in Figures 2-5.

Optimizers

Three clusters differ in the importance attached to price versus quality. To start with the largest cluster, "Optimizers" (O, 28.4 per cent) attach equal weight to both parameters in product choice. Consumers attributed to this price segment are prepared to invest in price search to realize deals for high quality products. Their "Concern for quality" (CQ) is

Table IV Factor analysis results

	Total market	Paper tissue	Soap bar	Detergent	Chocolate bar	Facial moisturizer	Jeans	Television set	Washing-machine
Eigenvalues									
IRP	4.033	3.681	3.913	4.025	3.769	4.053	5.011	4.102	3.677
CQ	2.199	3.208	2.307	2.662	2.027	2.355	1.952	2.049	1.873
AP	2.160	2.328	2.118	2.238	1.930	1.914	1.486	1.597	1.724
% variance									
TOTAL	59.947	65.833	59.561	63.751	61.482	59.438	60.354	55.345	51.953
IRP	28.811	26.292	27.953	28.753	26.925	28.949	35.796	29.301	26.264
CQ	15.708	22.912	16.478	19.014	14.475	16.818	13.943	14.638	13.376
AP	15.429	16.629	15.130	15.985	13.785	13.670	10.615	11.406	12.314
α									
IRP	0.9024	0.9666	0.8873	0.9423	0.8365	0.9191	0.8899	0.8692	0.8576
CQ	0.8140	0.8602	0.8237	0.8392	0.7518	0.7765	0.7954	0.7389	0.7220
AP	0.7107	0.7066	0.7044	0.7215	0.7345	0.7002	0.7432	0.6848	0.5259

Notes: IRP = internal reference price; CQ = concern for quality; AP = attention to price cues

Table V Cluster analysis – selection of the number of clusters

	ETA ²	PRE ²	Avg. F-values	Avg. difference	t-values					
CG total										
2	0.29	0.29	0.71	0.53						
3	0.43	0.19	0.59	0.68						
4	0.54	0.20	0.49	0.76						
5 clusters	0.61	0.14	0.42	0.87						
6	0.65	0.10	0.39	0.92						
7	0.68	0.08	0.35	0.95						
8	0.70	0.08	0.33	0.97						
κ	SH	PAP	SOA	DET	CHO	MOI	JEA	TEL	WMA	
2	—	0.31	0.92	0.77	0.68	0.81	0.96	0.92	0.96	
3	—	0.36	0.69	0.80	0.70	0.65	0.31	0.23	0.36	
4	—	0.56	0.86	0.57	0.84	0.75	0.44	0.82	0.29	
5 Cl.	0.90	0.79	0.84	0.89	0.79	0.86	0.63	0.65	0.47	

Notes: SH = split half consumer goods; PAP = paper tissues; SOA = soap bar; DET = detergent; CHO = chocolate bar; MOI = facial moisturizer; JEA = jeans; TEL = television set; WMA = washing-machine

Table VI Cluster analysis – cluster mean composite scores

Cluster no.	Name	IRP	CQ	AP	Size abs.	Size %
1	BCB	0.10	1.70	3.71	1,063	20.9
2	DB	–0.37	3.33	3.47	972	19.1
3	O	–0.21	2.06	2.18	1,445	28.4
4	HPS	1.66	2.19	2.82	661	13.0
5	PS	–0.56	3.60	1.96	946	19.6
Total		0	2.53	2.79	5,087	100.0

Notes: BCB = brand conscious buyers; DB = discount buyers; O = optimizers; HPS = high price shoppers; PS = price seekers; IRP = internal reference price (standardized means); CQ = concern for quality; AP = attention to price cues

reflected by store choice with preferences for supermarkets and hypermarkets. These retail formats are primarily associated with variety and quality of assortment. On the other hand, high average ratings for attractiveness and usage of loyalty programs, as well as reported interest in bargaining and a higher “relevance of alternatives” confirm concern for price. These shoppers are average in socio-economic terms. It is rather attitudes such as “innovativeness” and “career orientation” which give some indication for cluster description (see Figure 2).

Price seekers

Second, “Price Seekers” (PS, 18.6 per cent) place price as a primary decision criterion. These shoppers invest a lot of time and effort in price information search which is rewarded by

Figure 2 Optimizers

Base: total market (Index = 100)

Key: ALT = relevance of alternatives; BRAND = concern for brands; BON = attractiveness of loyalty programs; BAR = attractiveness of bargaining; CAR = career orientation; TIME = perceived time pressure; INNO = innovativeness; AGE = age; CHIL = children in household; INC = household income

Note: values for AGE, CHIL, INC > 1 read above average, all other items with values > 1 read above average disagreement

Figure 3 Price seekers

Base: total market (Index = 100)

Key: ALT = relevance of alternatives; BRAND = concern for brands; BON = attractiveness of loyalty programs; BAR = attractiveness of bargaining; CAR = career orientation; TIME = perceived time pressure; INNO = innovativeness; AGE = age; CHIL = children in household; INC = household income

Note: values for AGE, CHIL, INC > 1 read above average, all other items with values > 1 read above average disagreement

Figure 4 Brand conscious buyers

Base: total market (Index = 100)

Key: ALT = relevance of alternatives; BRAND = concern for brands; BON = attractiveness of loyalty programs; BAR = attractiveness of bargaining; CAR = career orientation; TIME = perceived time pressure; INNO = innovativeness; AGE = age; CHIL = children in household; INC = household income

Note: values for AGE, CHIL, INC > 1 read above average, all other items with values > 1 read above average disagreement

the lowest “Internal reference price” (IRP) among all clusters. Conversely, “Concern for quality” (CQ) is particularly low. This may be explained by the little quality differences this group of consumers expects within the product categories. Consequently, a large array of alternatives can be considered to realize deals or low prices within an acceptable quality level. The price segment collects consumers with lower incomes and larger families. They can therefore be referred to as “Must-economizers” (Diller, 2000, p. 122). As one might expect, “Price seekers” tend to prefer discounters.

Brand-conscious buyers

“Price seekers” (PS) contrast sharply with the third cluster, the “Brand conscious buyers” (BCB, 20.9 per cent). “Brand conscious buyers” (BCB) have the highest quality expectations and are most reluctant to search for low

prices or deals (AP). As a result, the “Internal reference price” is a lot higher than all other price segments but the “High price shoppers” (HPS). “Brand conscious buyers” (BCB) is a segment of high income-shoppers who perceive high quality differences between the products of a product category. Therefore, brands play an important signalling role: “quality”, “innovation”, “prestige”, “fashion” and “lifestyle”, connoted with the brand, justify a higher price. A lower average relevance of alternatives in purchase decisions confirms higher brand loyalty. Loyalty may also be a correlate of the higher average age reported for this group.

Discount buyers

The remaining two clusters differ greatly from each other, but seem to be similar insofar as their purchase behaviour is

Figure 5 Discount buyers

Base: total market (Index = 100)

Key: ALT = relevance of alternatives; BRAND = concern for brands; BON = attractiveness of loyalty programs; BAR = attractiveness of bargaining; CAR = career orientation; TIME = perceived time pressure; INNO = innovativeness; AGE = age; CHIL = children in household; INC = household income

Note: values for AGE, CHIL, INC > 1 read above average, all other items with values > 1 read above average disagreement

driven by the need of simplifying choice processes. “Discount Buyers” (DB, 19.1 per cent) are neither price nor quality conscious. Indeed, the mean composite score of “Attention to price cues” (AP) is low compared to “Brand conscious buyers” (BCB) and their “Concern for quality” (CQ) matches the level reported for “Price seekers” (PS). A closer analysis reveals that these buyers have the lowest mean score on “career orientation” and virtually reject brands. The purchase behaviour therefore suggests independency from quality-, brand- or price preferences. This may be motivated by the need of simplifying the choice process. Indeed, discounters with their clear assortment structure and focused promise of the lowest price available are the preferred store format by this price segment.

High price shoppers

In contrast, “High price shoppers” (HPS, 13.0 per cent) exhibit high quality and brand preferences (see Figure 6). These preferences are less pronounced compared with “Brand conscious buyers” (BCB), but the level of “Internal reference price” (IRP) is by far the highest of all price segments. “Time pressure” and “career orientation” have the highest agreement scores among all clusters. It may be concluded that these shoppers recur to time-saving product choice heuristics thereby decoding higher prices as indicator of quality.

Five types of price behaviour have been generalized across the categories studied. But does the product category affect the shoppers’ price behaviour? The total sample had been divided into four sub-groups of two products each to analyse cross-category behaviour for every shopper. The main results are given in Table VII. Agreement is obviously “poor” across all product categories with $\kappa = 0.18$. Hybrid price behaviour is therefore supported for a substantial part of the shoppers: indeed, only a third of all shoppers are attributed to the same cluster for both products.

A more in-depth analysis of the data reveals some interesting detail. First, some clusters are generally more

volatile than others. In particular, only 22.4 per cent of “High price shoppers” (HPS) and “Discount buyers” (DB) are classified to the same cluster in both product categories, whereas 42.0 per cent of the remaining three clusters have an identical classification. Second, the product class itself drives behaviour consistency. When the analysis is restricted to fast moving consumer goods, κ improves to 0.21. Price uncertainty, quality uncertainty and financial risk of fast moving consumer goods may be perceived as rather low compared to durable goods (see Table I). In these choice situations, better quality is more affordable and the functional risk is lower. Interestingly, the increase of κ is a composite of two opposite effects: a larger number of “Brand conscious buyers” (BCB) and “Discount buyers” (DB) behave more consistently, whereas the share of identical attributions decreases for the other three clusters. In product categories where quality is affordable, “Brand conscious buyers” (BCB) are more likely to exhibit quality preferences. At the same time, “Discount buyers” (DB) behave more consistently as quality uncertainty decreases. As far as “Optimizers” (O) are concerned, utility of optimizing quality and price decreases.

This picture is even more pronounced when further narrowing down the analysis to the product categories with the lowest average price (chocolate bar, paper tissue, soap bar). In that case, κ increases to 0.25. As a conclusion, if groups of products are defined according to similar patterns of perceived (financial) risk, brand and quality preferences depend on the shoppers’ ability to handle his perceived (financial) risk. In low perceived risk situations consumers also tend to simplify choice as either maximizing quality or minimizing cost. This may be explained by the lower utility of information search for best value. Price behaviour may therefore primarily be identified as consumer attitude for a group of products which is composed according to similar patterns of perceived risk in a particular choice situation.

Figure 6 High price shoppers

Base: total market (Index = 100)

Key: ALT = relevance of alternatives; BRAND = concern for brands; BON = attractiveness of loyalty programs; BAR = attractiveness of bargaining; CAR = career orientation; TIME = perceived time pressure; INNO = innovativeness; AGE = age; CHIL = children in household; INC = household income

Note: values for AGE, CHIL, INC > 1 read above average, all other items with values > 1 read above average disagreement

Table VII Hybrid price behaviour

	BCB	DB	O	HPS	PS	κ
Total CG	40.0	26.1	43.1	16.4	42.8	0.18
FMCG	44.4	44.1	39.9	15.2	36.6	0.21
LAP	47.0	53.0	36.2	18.7	40.3	0.25

Notes: % consistent classifications; Total CG = total consumer goods; FMCG = fast-moving consumer goods; LAP = categories with lowest average price (paper tissue, soap bar, chocolate bar); BCB = brand conscious buyers; DB = discount buyers; O = optimizers; HPS = high price shoppers; PS = price seekers

Managerial implications and limitations

The preceding findings suggest that price management should be concerned with price segment structures and their specific price needs. Particularly, price segmentation could benefit to retailers like Eddie Bauer to increase the effectiveness and efficiency of consumer targeting. Several major implications can be identified: First, “Discount buyers” (DB) and “Price seekers” (PS) do not seem to represent a sustainable potential for quality differentiation. Second, price competition yields low perceived value for two further segments, “Brand conscious buyers” (BCB) and “High price shoppers” (HPS). Third, without compromising an expected high level of product quality for a lower price, “Optimizers” (O) are prepared to invest time and effort for price rewards. These insights suggest that national brands should design targeted price concepts such as couponing and reward programs rather than mere price promotions. Finally, knowledge of perceived risk patterns may help to address the consumers’ price preferences according to classes of products.

Some limitations of the study have to be noted which in turn offer opportunities for further research. While the study intended to identify common segment structures across fast moving consumer goods and durables, scales for measuring “Attention to price cues (AP)” have been inadequate for the two durables with longer purchasing cycles. Further,

conclusions regarding product group-related price attitudes should be appreciated with caution, as the analysis is limited to cross-category observations only. The research does also not take environmental conditions at the point of purchase into consideration. These situational factors, such as store design or merchandizing techniques, may determine the buyer’s shopping experience and moderate the perception of price cues. Lastly, the exploratory methodological approach to data analysis delivers insight into how consumer price behaviour may be differentiated. However, we implicitly assume that one identical behavioural model applies to all segments. This may not be true. Therefore, at a confirmatory stage, structural equation modelling for finite mixtures using refined measurement scales should aim at improving price segmentation by accounting for potential segment-specific relations between the segmentation variables.

Summary

The study suggests five stable shopper segments across eight product categories. The result was obtained using composite scores of price-related items on the basis of a single factor structure identical to every category. Three segments with different emphasis on the importance of price and quality respectively were found. “Brand conscious buyers” (BCB) have high brand and quality preferences. In contrast, “Price seekers” (PS) focus on low prices. “Optimizers” (O) attach equal weight to quality and price. Two further price segments are identified which seem both to be characterized by using price as a choice heuristic. “Discount buyers” (DB) disregard the importance of either quality or brands or price. Prevalence of discounters and lowest price tier preferences reflect this attitude. “High price shoppers” (HPS) may simplify the product choice process by using the price cue as quality indicator.

However, to a substantial part, price behaviour is hybrid: Price sensitive shoppers in facial moisturizers may be indifferent towards paper tissues, but quality conscious in detergents. Categories such as television sets and washing

machines, for example, obviously differ from most fast moving consumer goods with respect to a more extensive purchasing process which may be also due to the perceived risk inherent in this class of products. Therefore, homogeneity of product categories in terms of perceived risk drives price behaviour consistency across categories.

Notes

- 1 The full survey is available from the authors upon request.
- 2 The kappa index is criticized for some of its properties, e.g. overconservatism and, under some conditions, inability to reach one, even in case of perfect agreement (Cohen, 1960; Rust, 2001). An alternative convention for interpreting κ values is proposed by Landis and Koch (1977). The suggested guidelines are: less than 0.00 = poor, 0.00 to 0.20 = slight, 0.21 to 0.40 = fair, 0.41 to 0.60 = moderate, 0.61 to 0.80 = substantial and 0.81 to 1.00 = almost perfect.
- 3 The item was inadequately specified to exclusively account for value consciousness. Relevance of alternatives as specified in this study may stem from both, quality conscious variety seeking, and value consciousness. Ailawadi *et al.* (2001) provide a useful specification of this item to measure value consciousness.
- 4 The survey did not include the indicators "fair price" and "expected future price" (Winer, 1988).

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Corresponding author

Hans H. Stamer can be contacted at: hans.stamer@wiso.uni-erlangen.de