

THE INFLUENCE OF HYSTERESIS IN CONSUMER'S BEHAVIOUR FOR PREMIUM PRICE EVALUATION

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Abstract:

The paper deals with an example of the manifestation of the hysteresis in consumers' behaviour for the Latvian company operating on the market closest to oligopoly and having a local brand name. Based on the quota sample of 332 company stores consumers, their loyalty, willingness to pay for domestic cosmetic products and the propensity to buy habitual products were evaluated. In the survey the unfolding bracketing procedure is used. It is shown that the relationship between the number of loyal consumers and the product price depends on the price increase or decrease and has the form of a hysteresis loop. The width of the hysteresis loop depends on the pricing of a competing company. The range of the premium prices bringing a positive economic impact is determined. The obtained results confirm a considerable influence of the hysteresis effect on consumers' sensitivity to price changes. The findings can be useful for managers in evaluating a possible revenue growth connected with the premium pricing strategy.

Keywords: willingness to pay, premium pricing, hysteresis, consumers' behaviour

1. Introduction

For successful sales in the market it is essential to take an advantage of the brand or individual features of products that attract the consumers' attention. The brand of a company is its asset, which includes the presence of loyal consumers and associations increasing the value of the offered product, such as a prestigious trademark, the place of production, ecological compatibility, etc in the eyes of consumers (Aaker, 1996; Davis, 2002). The loyalty of a consumer to the company possessing a brand enables it to yield additional profit through sales at higher prices, i.e. by introducing a price premium (Sethuraman, 2000; Bondesson, 2012).

A price premium determines the size of an addition to the price in relation to the competitive price which consumers are willing to pay for the product of the preferred brand. The product covered by the recognizable brand is more attractive for the consumer, even compared with a

similar product having a lower price (Netemeyer, Krishnan et al, 2004). The presence of the brand is directly related to the willingness of loyal customers to pay a premium price for a product (Aaker, 1996; Netemeyer, Krishnan et al, 2004; Anselmsson, 2007). Therefore, companies managers in their practical activity find it necessary to determine a premium price on a product for a more efficient use of the brand advantages.

Given below are some studies, which, being aimed at forecasting consumers' response to a price increase, relate the obtained estimation of consumers' willingness to pay a premium price for specific products.

A survey conducted in one of the hotels managed by a marine reserve has demonstrated the tourists' interest in the marine environment conservation and their willingness to pay a price premium for staying in the reserve territory (Svensson, Rodwell et al, 2008). The

elasticity of demand and an optimal price premium for accommodation, allowing to increase the revenue of the hotel were determined.

In (Donovan and Nicholls, 2003) a possible price premium for products made from local timber was determined. It is shown that the place of production is a competitive advantage provided the products are sold in Alaska. A survey conducted in the United States has revealed the consumers' willingness to pay a price premium for local agricultural products in order to support local farmers (Howard and Allen, 2008).

Consumers are observed to have a growing interest in the environmentally responsible business, which may be taken into account while pricing green products. For example, in Alaska, consumers are willing to pay a price premium for the products manufactured from standing dead trees of yellow cedar to save the living trees (Donovan, 2004).

The majority of consumers in the USA are willing to pay a price premium for clothes made from new types of cotton cultivated within the frames of the national toxic pesticide-free programme aimed at reducing the negative impact environment (Jung and Norum, 2011). Consumers in Northern Italy are also willing to pay a price premium for pesticide-free fresh fruit (Boccaletti and Nardella, 2000).

A consumers' self-esteem growth, as by buying a particular product, for example, s/he supports certain layers of society or protects environment, should be taken into account. Consumers' satisfaction with the product moderates a negative reaction to price increase (Homburg, Hoyer et al, 2005). Social environment makes a significant impact on consumers' willingness to pay a price premium (Mittal and Kamakura, 2001; Oliver, 1999), so do the conditions of a purchase creating an additional emotional pressure (Jensen and Drozdenko, 2008). Therefore, to predict the response to price change not only economic, but also psychological peculiarities of consumers' behavior should be taken into account.

The aforementioned studies consider the response only to possible price increase. In our view, in real commercial activity the evaluation of consumers' responsiveness not only to price increase, but also to its subsequent decrease has a considerable value for practitioners. It should be noted that fixing a premium price is a short-term strategy, as a rule. To evaluate the response to price change as to a dynamic process it is advisable to use the hysteretic model of a consumers' behavior.

2. Hysteretic models of a consumers' behavior

The presence of psychological limitations in switching from one brand to another is noted by many researchers, for example (Klemperer, 1995; Lambin, 2000). People prefer products from familiar brands that they have used before. Even the fact of the first use of the product of one brand increases its preference among other products. In their studies Simon, 1997; Galloway, 1999; Scheffer, Westley et al, 2003 note the delay in the responsiveness (inertia) to the product characteristics change, its price, in particular, typical for both individual consumers and consumer communities united by common goals, views, place of residence etc.

The substantiation for using hysteretic models to simulate consumers' non-linear response is given in the studies by Flay, 1978; Oliva, Oliver et al, 1992; Göcke, 2002; Moraru, Juganaru, 2013. Analyzing the dynamics of economic systems it is necessary to take into account their ability to "remember" the previous state, i.e. the hysteresis effect (Cross, Grinfeld et al, 2009).

A large set of parameters, such as previous purchases experience, social influence, „word of mouth” advertising etc. has an impact on the attitude to a product, especially when the process of interaction between supplier and consumer is not limited to a single purchase, but continues further. However, there is only one selection for modelling – to determine a parameter with

the greatest value for the given segment of consumers, providing very useful results for practical application (Galloway, 1999). To generate a stable-positive or stable-negative attitude to the product, the value of the determining parameter needs to overcome a certain

threshold. The variation of the parameter in the range between the thresholds is not noticed clearly by a consumer keeping his/her previous attitude to this product. The dependence has the form of the hysteresis loop, and is shown on Figure 1,a.

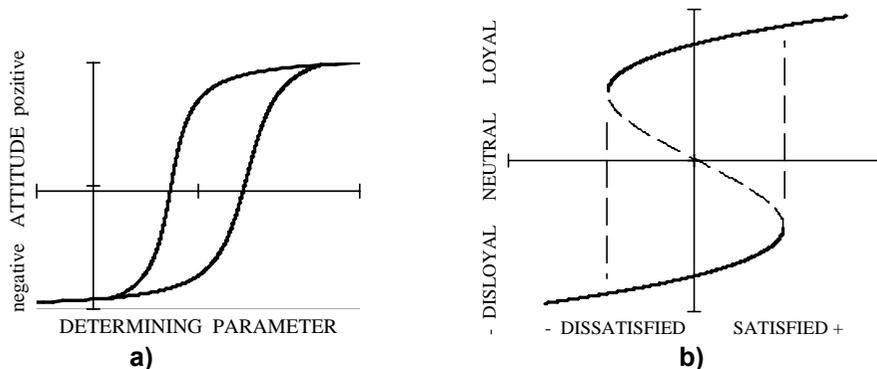


Figure 1. The relationship between determining the parameter of a product and a consumers' attitude a); the relationship between a consumers' loyalty and his post-purchases cumulative satisfaction b).

Source: Adapted from Galloway, 1999 and Oliva, Oliver et al, 1992

The catastrophe theory suggests several models including bimodality, and the effect of hysteresis to describe the human behavior involving sudden "catastrophic" changes (Flay, 1978; Oliva, Oliver et al, 1992; Ogden, 1995). In the simplest case a consumers' loyalty is a function of one parameter – consumers' cumulative satisfaction. A non-linear relationship between them corresponds to the fold catastrophe and has two thresholds, Figure 1,b. When the long-term cumulative satisfaction exceeds a certain threshold, consumers' loyalty rapidly increases, but below the other threshold loyalty decreases. Between these thresholds, the change of satisfaction has little influence on loyalty, which retains its previous value. Thus, the consumer has a "memory", which is natural for humans.

To simulate the behavior of consumers, who stop buying a product

if its price, as a determining parameter, exceeds the threshold β and resume buying when it falls below the threshold α , a non-ideal relay with different thresholds can be used, Figure 2, a. The resulting hysteresis effect gives rise to certain inertia of switching, i.e., if the conditions on both products are comparable, there is a stronger tendency to remain in the current state than to switch into the other one. Certainly, for consumers with different preferences the values of thresholds are different as well. The total behavior of a number of independent consumers can be modeled by a parallel connection of the same number of nonideal relays. Thus, from the reaction of a consumer with individual characteristics, the reaction of their community in the market can be evaluated.

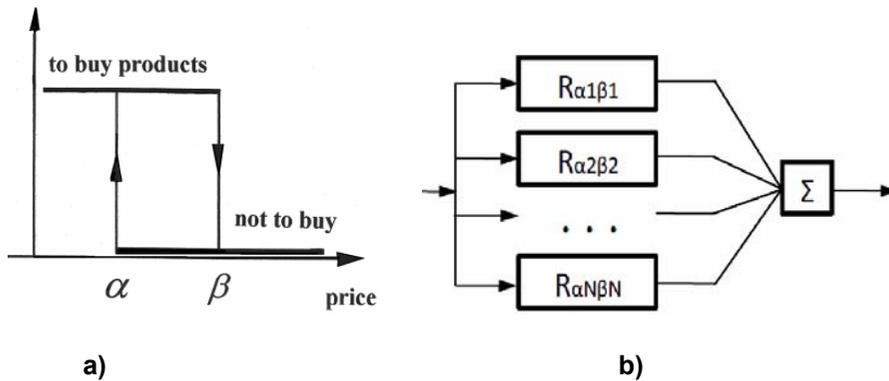


Figure 2. The nonideal relay, as the simplest hysteretic transducer for a consumers' behavior modeling a); the modeling of a consumers' community response by parallel connection of nonideal relays b).

The effects of social influence on consumers faced with a choice: to buy/not to buy were explored in (Gordon, Nadal et al, 2005). Depending on the path of price adjustments by the monopolist, computer simulations show hysteretic effects of consumers' behaviour. The results of computer simulation of oligopolistic market are presented in (Kindinova and Kuznetsova, 2009). The calculated relationships between the demands of product and its price, for different „word of mouth” transfer rates have the form of hysteresis loops.

So, the studies of many authors, some of which are mentioned above, show that the use of the hysteretic model is a well-grounded conclusion and it provides more realistic results.

3. Research object

In spite of the economics globalization, local brands sometimes successfully compete in local markets with world-renowned ones. A somewhat increased price is not critical for consumers' purchase decision making as to the products of leading brands. More important is the desire to buy a product of specifically this brand, especially if it has a cult status in the given area. In this case company managers have an opportunity of the effective use of the brand advantages by setting a premium price for the product on demand.

This article presents the well-known Latvian company cosmetic products

consumers' survey results. This company does not only make cosmetic broad-consumption products, but also has an extensive network of their branded stores on the Baltic market. The presence of several competing companies offering similar products in the region, suggests market conditions closest to oligopoly. The creating of a new series of cosmetic products, where various organic ingredients are widely used, has raised a great interest among consumers and resulted in the sales growth. It should be noted that the products manufactured by the company are classified as goods for daily use. This fact increases the importance of customer's loyalty to the brand because it implies regular purchases of products.

The purpose of this study is to obtain the information from the consumers; this information has a practical value for managers in their decision making on the products price increase and determining the value of a premium price. In addition to evaluating the consumers' willingness to pay a premium price, the survey was designed to evaluate the hysteresis in their reaction to various changes in price. While establishing the premium price value it is important to evaluate the consumers' price sensitivity not only to a price increase, but also to its subsequent decrease. The evaluation of the consumers' response to price changes is based on the hysteretic model of consumers' behavior described above.

4. Research design

In accordance with the study objectives, a questionnaire for buyers under survey was designed. The questions to respondents were grouped into the following four sections:

- the evaluation of customers' loyalty to the given company;
- willingness to pay a premium price for the cosmetic products of company;
- a respondents' attitude to statements connected with the presence of hysteresis with respect to familiar products purchases;
- evaluation of the difference in prices, enhancing the interest in purchasing similar products of another company.

For the practical use of the information obtained in the survey the level of the respondents' loyalty as a whole is important. The results obtained by (Davis, 2002) show that consumers with a high degree of brand loyalty, bring most of the company's revenue. The purchasing activity of the most loyal customers significantly exceeds the activity of other consumer groups and gives a possibility of charging a price premium.

To evaluate consumers' loyalty the methodology proposed in (Reicheld, 2003) was used. The respondents were asked the following question: "Could you, please, rate according to the scale from 0 to 10 how likely you are to recommend this product to your friends and colleagues?". According to the answers, all the respondents are divided into three groups. The first group with the rating of 10 or 9 are the company "promoters" who enthusiastically recommend the company product to their friends and acquaintances. The second group with the rating of 8 or 7 may be referred to as "neutrals". The third group with the rating of 6 or less, belong to „critics“, respectively. The net degree of consumers' loyalty termed as Net Promoter Score (NPS) is calculated as the difference between the percentage

correspondance between "promoters" and "critics." According to (Reicheld, 2003) loyalty is a consumers' ability to risk their own reputation by recommending this or that brand to their friends and acquaintances. Net Promoter Score is clear, and it has a practical applicability at all levels from top managers to sales agents.

One of the problems in sample surveys is a high percentage of the absence of responses to some questions, especially to those with a financial background. The reasons may lie not only in the unwillingness to respond, but also in the absence of opinion on the asked questions. One of the methods of reducing the number of non-responses is asking follow up questions by using a series of unfolding bracket questions aimed at receiving a range of meanings (Paulin, 2003; Lipovetsky, Magnan et al, 2011). The respondents were interviewed at the checkout in company stores immediately before the purchase, which allowed getting the responses in most realistic conditions (Wertenbroch and Skiera, 2002). To find out if a respondent was willing to pay a price premium, s/he was asked to make a series of hypothetical choices "to buy / not to buy" the goods that s/he had really picked with different additions to the existing price. The sequence of follow up questions with different additions to the existing price is shown in Figure 3. At each node the interviewee was asked if s/he was willing to pay the sum of money by several percent exceeding the one that had been calculated at the checkout for the picked product. For example, the respondent was asked whether s/he would buy the picked goods at the price increased by 20%. If the answer was "No" ("Yes"), a follow-up question indicating the price increase by 10% (30%) was asked. The last positive answer of the respondent was marked. To facilitate getting the response from the respondent, the corresponding addition to the price was converted into monetary terms (in EUR). The interviewer calculated this sum proceeding from the real cost of the

purchase. Thus, the sequence that includes no more than three questions gives us an evaluation of their willingness

to pay for the cosmetic products of the given company.

**Would you be willing to pay the asking price for chosen products?
(„yes” or „no”)**

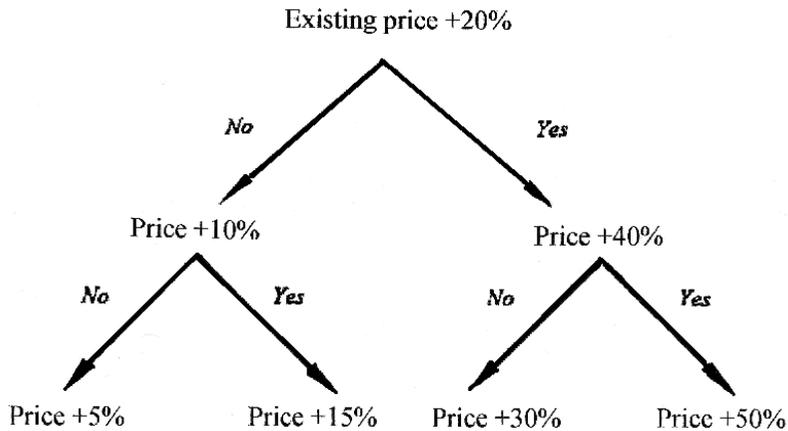


Figure 3. The sequence of questions based on the unfolding bracketing procedure.

Since the average cost of purchases ranged from 10 to 25 euros (see Table 1), we assumed that one step of additives of 5% or 10% is sufficient. In our view, for an ordinary customer it would be difficult to evaluate his choice when the price changes within less than one euro. Moreover, it was assumed that consumers' income does not play an essential role in their purchasing this type of goods. Therefore, the question on income, often causing confusion among respondents, was not asked.

Further, the respondent was asked a cluster of four questions aimed at enabling him/her to express his/her agreement on the statements connected with the presence of the hysteresis effect with respect to habitual products purchases of the preferred brand. The respondents were asked to evaluate their attitude to the offered statements (see Table 2). The five-point Likert scale was used.

The aforementioned maximal surcharge that the respondents have expressed their willingness to pay, evaluates the upper switching

threshold β_j in the hysteretic model of a consumers' behavior (Figure 2.a) in relation to the product of this company.

To evaluate the lower switching threshold α_j , the respondent was asked to answer the question: "Which price difference between a product similar in quality to the just purchased and habitual one will attract your attention with the purpose of making the first purchase?" The respondents were asked to make a series of hypothetical choices "attracts attention / does not attract attention," on another product with different versions of the price difference. The sequence of additional questions with different versions of the price difference analogous to the one shown in Figure 3 was used. As with the question on the willingness to pay, the proposed price difference in percentage was converted into euros based on the the real cost of purchase for each consumer.

5. Research results

The survey was conducted among consumers in the company stores at the moment of the purchase payment. To obtain a representative sample of respondents the quotas made up on the company recommendations about the tentative gender and age composition of their consumers were used. Throughout the survey the responses from 350

respondents were obtained. The responses received from 18 respondents were incomplete, and the information received from them was not used. The general demographic characteristics of the 332 respondents, corresponding to the predetermined quotas, as well as the distribution of the cost purchases made by them are shown in Table 1.

Table1

The summary statistics of the respondents (N=332)

Characteristic	Variable	Percentage, %
Gender	Male	18
	female	82
Age	≤ 20 years	7
	20 – 30 years	22
	30 – 40 years	43
	40 – 50 years	18
	≥ 50 years	10
Cost of purchase	≤ 10 EUR	18
	10 – 20 EUR	56
	21 – 30 EUR	22
	≥ 30 EUR	4

The results of consumers' loyalty evaluation according to the Reicheld's (Reicheld, 2003) method are shown in Table 2. It follows from the survey results that a considerable number of the respondents are loyal to the company's brand. The NPS index value is +30.3, which characterises a company with a stable growth.

Table 3 shows the data on the maximum value of a price premium that

the respondents have expressed their willingness to pay for the picked cosmetic products. About half of the respondents were willing to pay the sum from 20% to 30% more than the existing price for the picked products. In our opinion, the willingness to pay this high enough premium can be explained by the relatively low cost of the products of this category.

Table 2. The respondents' loyalty evaluation by the Reicheld's method

Promoters	Neutrals	Detractors	Index NPS
34.6 %	60.9 %	4.5 %	+30.1

Table 3. Willingness to pay (WTP) expressed by the respondents for the company cosmetics

Respondents' percentage	WTP
3.9%	None
1.2%	+5 %
2.4%	+10 %
3.3%	+15 %
10.6%	+20 %
8.7%	+25 %
32.0%	+30%
27.1%	+40%
6.6%	+50%
4.2%	≥ 60%

Table 4. Respondents' sensitivity to increase the company cosmetics prices

Premium price	Respondents' percentage	Midpoint elasticity
None	100%	-
+5 %	96.1%	-0.82
+10 %	94.9%	-0.55
+15 %	92.5%	-0.56
+20 %	89.2%	-0.63
+25 %	78.6%	-1.08
+30%	69.9%	-1.36
+40%	37.9%	-2.70
+50%	10.8%	-
+60%	4.2%	-

Stating the maximum value of the price premium for the picked cosmetic products during the survey, the respondents imply that at the further price increase they will stop buying cosmetic goods from this company and switch to the consumption of similar products from a competing company. Consequently, the willingness to pay a maximum price premium expressed by a respondent yields an evaluation of the upper switching threshold β_j in the hysteretic model of his/her behavior. The more product prices are increased, the more consumers „are excluded” from the process of repeat purchases of the given company products, „switching” to competitors' products. The results given in Table 4 present the number of consumers which will remain loyal and will continue to buy cosmetic products of this company with the respective price increase. This data were used to reveal the dependence displaying the

consumers' sensitivity to the price increase on the company cosmetic product presented as curve 1 in Figure 5.

Consumers' sensitivity to price changes may be illustrated by the coefficient of elasticity representing the ratio of percentage change in the number of consumers to the percentage change in the price of the product that has caused this change. The midpoint elasticity formula was used for the calculations due to relatively high price changes. The survey results shown in Table 4 demonstrate that the change of the number of consumers is inelastic at the the price increase by 20%. By adopting the assumption that the sales volume is proportional to the number of product consumers, we find that the increase in price by 20% can lead to a relative gross revenue increase by 7%. In the case considered, a positive economic effect can be achieved within the price growth range from 5% to 20%, Figure 4, b.

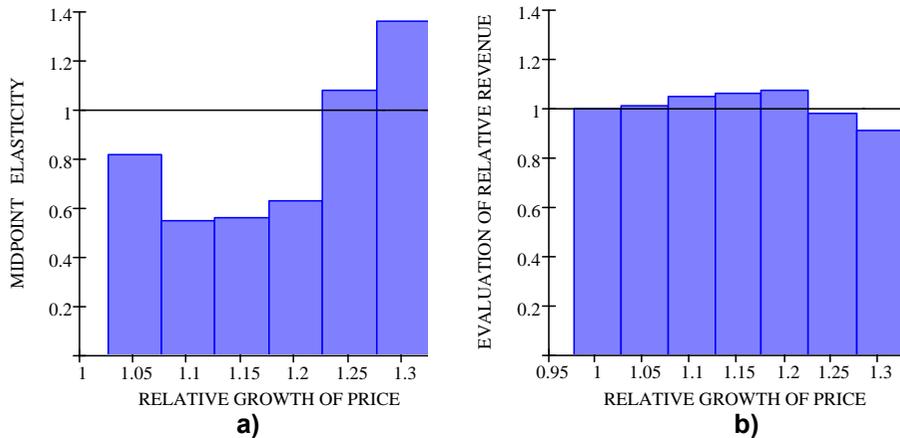


Figure 4. The dependence of elasticity a) and revenue b) from the price growth.

Table 5. The mean rates of the respondents’ perceptions concerning hysteresis in their behaviour. Cronbach’s alpha $\alpha = 0.81$.

Statements	Mean	Standard deviation
It makes sense to buy this purchased brand instead of another brand, even if they are the same;	4.27	0.81
I have experience using this brand and I would still use it again even if occasionally the product seems not good enough	3.73	0.94
Even if another brand has the same features as this purchased brand, I would prefer to buy the customary brand.	3.10	0.79
I prefer the customary brand, but I can switch to another brand but there should be a good reason for this	4.13	0.71

Scale: 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree.

To confirm the assumption of the respondents’ predisposition to familiar brand products purchases and the necessity of the „compelling” reasons for switching to products of another brand, they were asked to rate their personal consent with the statements given in Table 5. The respondents’ consent with the statements given in the survey assumes the presence of hysteresis in their behavior as consumers. The evaluation was performed against the five-point Likert scale. Proceeding from the responses the mean and the standard deviation value for the respondents’ ratio to each statement were calculated. The obtained results allow us to state the respondents’ consent with the given

statements and confirm the possibility of modelling their behaviour using the hysteretic model. The Cronbach alpha coefficient value $\alpha = 0.81$ allows to consider the respondents’ internal rates within this construct rather consistent.

Table 6 presents the respondents’ evaluation of the price difference to similar products, which could be a stimulus for the first purchase of a competing company cosmetic products. About half of the respondents think that the price difference between 15% and 20% for this category of products is sufficient to seriously consider the question of using another company goods. A separate row in Table 6 presents the distribution of the responses

of the group of respondents (21.4% out of the total number in accordance with Table 3), who have expressed a willingness to pay a price premium not higher than 20%. This group was emphasised due to their higher sensitivity to price increase. It is most likely that, in case of a possible price increase, it will be the consumers from this group who will be the first „to switch” to a competing company products purchases.

The value of the difference in price that consumers have marked as a possible excuse for refusal to purchase customary products and switch to a competing company products purchase obtained as a result of the

survey is used in this article *only for the evaluation of the lower threshold α_j* in the hysteretic model, Figure 2, a. The obtained values of the difference in price are included as a component into a broader concept of psychological cost of switching (Klemperer, 1995). A detailed analysis of the possible reasons for consumers' switching from purchasing products of one brand to another, as well as the parameters determining this process and including the concept of the switching cost is given, for example, in the studies by Klemperer and Lambin (Klemperer, 1995; Lambin, 2000).

Table 6. The difference in price, which is a stimulus for the purchase of a competing company products

Difference in prices	5 %	10 %	15 %	20 %	25 %	30 %
Percentage for all respondents ($N = 332$)	-	5.1%	21.1%	50.9%	19.0%	3.9%
Percentage for respondents with $WTP \leq 20\%$ ($N_1 = 71$)	-	16.9%	57.7%	19.7%	5.7%	-

6. Evaluation of the consumers' response based on the hysteretic model

Let us consider the influence of hysteresis in consumers' behavior on the example of the market, having the structure of duopoly (a particular case of oligopoly). When there are two competing producers on the market, their actions significantly influence each other. Let us assume that the initial prices for the products of both competing companies were similar (Figure 5, point **A**). Supposing the company for which the survey had been conducted increased the prices of its products by 23% (point **C**). In this case, 21.4% of the consumers who have expressed the willingness to pay no more than 20% (see in Table 3) will start buying the products of a competing company at a price that has not changed. Let us assume that the first company sets an aim to return them only by price decrease without using other marketing practices. To achieve this, in accordance

with the hysteretic model, the new price should be decreased by the amount specified in Table 6 with respect to the price of the competing company. Thus the lower switching threshold value α_j in the j -th consumers' behavior hysteretic models can be obtained. Curve 3 in Figure 5 presents the increase in the number of consumers with a decrease in price for the case when the products price of the competing company has remained unchanged. If the competing company having taken the opportunity, also increased the price, for example by 10%, the increase in the number of consumers is presented by curve 4. The shaded area in Figure 5 reflects the influence of a competing company price changes on the width of the hysteresis loop. It should be noted that in this example only the responses of the respondents with $WTP \leq 20\%$ (mentioned in a separate row in Table 6) about the price difference were used.

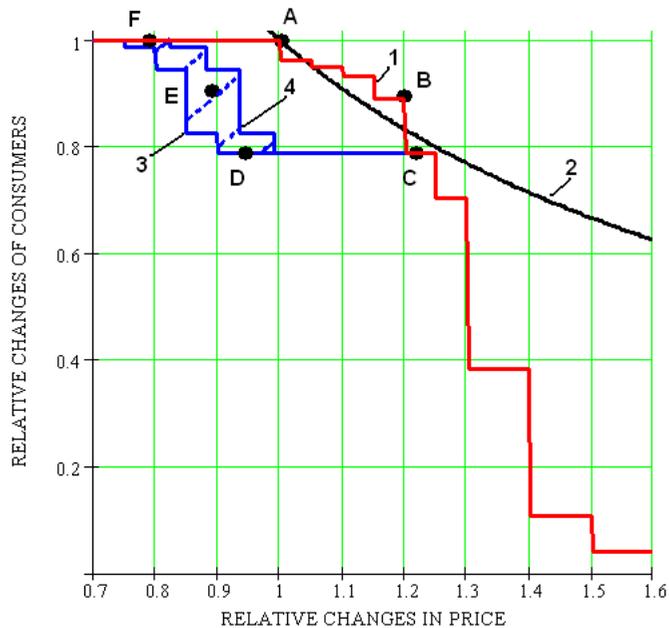


Figure 5. The consumers' sensitivity to price increase (curve 1) and subsequent decrease (curves 3 and 4). The shaded area depicts the influence of competing company price changes for the duopoly market.

The dependence depicted by curve 1 in Figure 5, demonstrates the consumers' sensitivity only to price increase. Restoring the consumers' number, as a response to price decrease, will be taking place at a much slower rate. The decrease in the number of consumers at the price increase occurs as shown along the lines **A-B-C**. The increase in the number of consumers during the subsequent price decrease occurs along the lines **D-E-F**. Moreover, its position is more precisely determined by the price of a similar product of a competing company.

The area, in which a positive economic effect from the price increase is possible, lies above curve 2 in Figure 5. The maximum increase in the gross revenue is achieved by increasing the price by 20%, Figure 4, b. But, the further price increase leads to a significant decrease in the number of consumers keeping to purchase the company products. The data on the respondents'

willingness to pay a price premium are based on their personal idea and may somewhat change depending on their personal preferences or the social environment influence. Restoring the number of consumers because of the presence of hysteresis in their behavior requires considerable efforts. Therefore, it seems reasonable to recommend the value of the premium price of not more than 15%, notwithstanding the fact that it reduces a positive effect from its introduction.

Undoubtedly, the consumers' reaction on the market depends on many factors and is expressed in a more complex form. However, it seems very important that the data obtained confirm its hysteretic character. This fact should be considered in solving practical problems of marketing.

7. Conclusion

The article presents the Latvian locally branded cosmetic company

products consumers' survey results. The aim of the survey was to evaluate their response to a possible price increase. The willingness to pay a price premium for widely used branded cosmetic products is determined, which allowed to obtain the value of the dependence of the loyal consumers' number decrease at the price increase. For a particular case (the duopoly market) the restoration of the consumers' number at the subsequent price decrease was considered. On the whole, the obtained dependence has the form of the hysteresis loop. It is shown that the width of the hysteresis loop is influenced by the pricing policy of the competing company. A high level of the company brand loyalty (index NPS = +30.3), adds credibility to the evaluation of consumers' sensitivity to price changes obtained as a result of the survey.

For practitioners it is necessary to take into account the hysteresis in consumer behavior when evaluating a possible revenue growth related to the use of premium pricing strategy. The premium price increase to the degree that significantly reduces the number of loyal consumers should be avoided because it will require a considerable effort to return them. It is expedient to accompany the price increase by additional marketing actions with the purpose to moderate consumers' negative emotions.

It should be noted that consumers' willingness to pay and the hysteresis model parameters evaluation reflect the respondents' opinions only by the moment of the survey. Such evaluations are not permanent and are subject to change. Any person has a free will and emotions that may vary both for personal reasons and under the influence of social environment. However, the cumulative reaction of consumer community varies more slowly. This fact allows to use the data of such surveys in marketing to determine short-term strategies. Making regular surveys allows tracking possible changes in consumers' loyalty to a company products and take them into account in the marketing policy.

The research of processes in current business environment leads to the necessity to take into account a non-linear type of interaction between market participants to implement a more realistic simulation of dynamic processes. The relations between a supplier and a consumer may vary in the course of time both in the direction of development and the reduction of cooperation due to different factors. Therefore, in our opinion, the effect of hysteresis taking into consideration consumers' real behaviour should find its reflection in the majority of traditional marketing dependencies.

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