Elements of Pharmacy Service and Satisfaction: Patient versus consumer?

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Abstract:

The objective of this research is to identify the characteristics of a retail pharmacy that make it possible to better satisfy the patient/consumer and to analyze their modes of contribution to this satisfaction. The aim of this analysis is to check if pharmacies'customers behave as patients or consumers. The usefulness of our study is to deduce managerial implications which should permit pharmacy owners to define the pharmacy service elements that must be adjusted to increase the satisfaction level of their customers. The "tetra-class model" of factors contributing to satisfaction in a pharmacy service experience will serve as the basis for comprehending the role of the different characteristics of a pharmacy in the satisfaction process. French customers seem to be more patients than consumers. We have also identified the profiles of the most and least satisfied customers.

Keywords: Healthcare, pharmacy, satisfaction, customer, patient, consumer, pharmacy service elements, tetra-class model

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Introduction

In France, the pharmacy outlet is legally defined as “the establishment dedicated to the retail distribution of medicine, products and objects reserved for pharmacists”, as well as to the execution of medical or pharmaceutical preparations (Art. L. 5125-1, Public Health Code). In the particular context of the French monopoly of pharmaceutical distribution, pharmacists have long considered the client entering their outlet as a patient and not as a consumer. Today however, real competition between outlets does exist as a result of the mutation in the sector of pharmaceutical distribution (Moinier, 2009). This transformation leads pharmacists to view their clientele differently, notably in its consumer behavior. Among the different variables of consumer behavior that could be analyzed, satisfaction appears to be central for the improvement of the quality of service in a situation of market monopoly (Fornell, Johnson, Anderson, Cha and Bryant, 1996). Moreover, satisfaction is considered a prerequisite to repeat purchase intentions, to client loyalty and to a favorable word-of-mouth reputation (Anderson Fornell and Lehmann, 1994; Heskett, Jones, Loveman, Sasser and Schlesinger, 1994; Jones and Sasser, 1995; Rust, Zahorik and Keiningham, 1995).

The objective of this research is to identify the attributes of a pharmaceutical outlet that make possible greater the customer satisfaction and to study the contributive mode of these characteristics. The aim of this analysis is to show if pharmacies’customers behave as patients or consumers and we will establish the profiles of the most and least satisfied customers. The value of this study is to deduce the managerial implications that should enable pharmacy owners to define the elements of service which must be adapted to improve the satisfaction of their patient/consumers. The “tetra-class model” (Llosa, 1997) of factors contributing to satisfaction during a pharmacy service experience will serve as the tool for apprehending the role of different pharmacy characteristics in the satisfaction process.

In the first part of this article, we set out the conceptual framework and the hypotheses of the research methodology. In the second, we present the findings of the empirical study. Lastly, we will discuss their managerial implications.

The Conceptual Framework

Context of French Pharmacies

The French pharmacy context is unique in Europe to the extent that pharmaceutical distribution belongs exclusively to pharmacists (Table 1). As a consequence, the patient/consumer is obliged to use this type of outlet when buying medicine. This obligation no longer holds for those pharmaceutical products that may now be marketed in supermarkets or specialized superstores, the consumer being able to arbitrate between outlet choices.

Table 1 here.

Pharmacists, who have been protected until now, run the risk of having to adapt to new organizational modes and to the resulting new economic challenges. While pharmacy property is still regulated in France – a pharmacist not being able to own more than two outlets – the possibility for him to invest in several pharmacies seems to be taking shape. The creation of pharmacy brand-name signs should then become possible (open or not to non-pharmacists – see Moinier, 2009). If that prospect materializes, the modification will not be without consequence for operating a pharmacy since pharmacists would inevitably have to begin implementing a marketing strategy, not only to attract patient/consumers, but also to develop loyalty to their outlet. To do so, pharmacy owners will have to take an interest in patient/consumer satisfaction and in the attributes that characterize it.

Customer Satisfaction

Satisfaction, defined as "an affective state resulting from a cognitive and emotional evaluation process that occurs during a specific transaction" (Plichon, 1999), would become henceforth the veritable focal point of the strategy for pharmaceutical outlets since it increases the efficiency of the firm's publicity and communication (Luo and Homburg, 2007). The satisfaction derived from a buying experience could be the fundamental factor for judging satisfaction at the pharmacy, especially because this service element concerns the customer's health and well-being (Bolton and Lemon, 1999). Such investigation of satisfaction enables the pharmacist to reinforce intended loyalty to the outlet, accentuated by the individual's high level of implication in an act of purchasing that is devoted to health and well-being.

In the case of products exchanged on competitive markets, satisfaction is conceptualized as a one-dimensional continuum, opposing two extreme poles (very satisfied versus very unsatisfied): positive and negative (Howard and Sheth, 1969; Oliver, 1980; Woodruff, Cadotte and Jenkin, 1983; Westbrook, 1987). Other authors in marketing believe satisfaction to be two-dimensional (Swan and Combs, 1976; Maddox, 1981; Silvestro and Johnson 1992; Smith, Weatherly and Tansik, 1992), considering that the factors engendering satisfaction are different from those causing dissatisfaction. Finally, a last group of researchers seems to synthesize the two versions by considering satisfaction as one-dimensional while at the same time supposing non-linearity in the function of factors contributing to satisfaction. These non-linear effects have led marketing researchers to investigate the asymmetry of factor impacts on satisfaction and to create plurifactorial models. The idea of this theory is that the contrary of satisfaction is not dissatisfaction but non-satisfaction (Kano, Seraku, Takahashi and Tsuji, 1984; Ray and Gotteland, 2005). Several types of factors can then engender satisfaction (or dissatisfaction). The four modes of contribution that are most often identified in the framework of satisfaction research are:

- "Basic" factors contributing to dissatisfaction when they are considered negatively, but which do not contribute to satisfaction even when evaluated positively,
- "Attractive" or "plus" factors that contribute to satisfaction only when evaluated favorably but that do not play a role in dissatisfaction,
- "One-dimensional" or "keys" factors that contribute to satisfaction when they are favorably evaluated, and which contributed to dissatisfaction when the evaluation is unfavorable,
- "Indifferent" or "secondary" factors that have little or no impact on the level of satisfaction or dissatisfaction.

As far as we know, there has been no study carried out to measure customers'satisfaction in the case of products sold within a monopolistic situation and that permits to underline these four contributions. However, in France, the pharmaceutical distribution market is in a monopolistic situation. We will focus on studying consumer satisfaction in such a market and we will compare the results obtained with those obtained in competitive markets whenever it is possible.

In the specific context of pharmacy services, satisfaction has been the subject of few studies: Foscht, Angerer and Moazedi (2006) for Austria, and Clerfeuille, Poubanne, Vakrilova and Petrova (2008, 2009) for Bulgaria. Fosh *et al.* (2006) build a scale of satisfaction from elements of pharmacy services. From this scale, they define 5 factors associated to 20 items (Appendix A1). By a factor analysis they show that the three factors "First impression", "Staff" and "quality/price ratio" have a positive effect on global satisfaction. This analysis has two limits. First it considers responses as continuous variables, so for a significant positive effect of a factor, general satisfaction increases when the factor increases and decreases when the factor decreases (which can be consider as "key" factor). When the factor has no significant effect on general satisfaction (which can be consider as this

"secondary" factor). With this model, it is not possible to obtain "basics" or "plus" factors. Second, obtained results don't take into account alls the items by only aggregated factors. Our study will allow to give more precisely the effect of the elements of pharmacy service on satisfaction.

Clerfeuille *et al.* (2008, 2009) evaluate the elements of the services provided in Bulgarian pharmacies and their contribution to consumer satisfaction using a tetra-class model. They try to measure the link between patient satisfaction and loyalty, after pharmaceutical market deregulation and the emergence of private pharmacies in competition to medicine dispensary. Although the situation is different in Bulgaria and in France we compare the results whenever feasible.

Analytical Framework of Satisfaction at Retail Pharmacies

Measurement of satisfaction

Are pharmacies' customers patients or consumers? Thanks to pharmacies'consumer satisfaction study, we will be able to verify if the type of products bought (essentially medecines) modifies the evaluation of the services and if the factors linked to the consumption of pharmaceutical products have similar contributions to those noticed for traditional consumer goods (food, clothes and so on). If it is the case, pharmacists will be able to regard their customers as consumers. If it is not the case, the customers will be assimilated to patients, regarding pharmaceutical products as non traditional consumer goods.

In our study, client satisfaction is analyzed using the Foscht scale (Foscht *et al.*, 2006), which was tested in the context of Austria pharmaceutical distribution with 400 respondents. We questioned those in our sample about satisfaction in general with respect to their pharmacy but also about the service elements in particular (Appendix A1). These elements make possible the conceptualization of a satisfaction process that is as much emotional as cognitive.

Its application in the French context required implementing a process of translation, retro-translation that many researchers recognize as necessary to assure the comparability of data collected by means of different languages. The problems of lexical and metric equivalents of the data arise to a lesser degree since our study is carried out solely on the national level and does not attempt to compare the data collected from one country to another (Bartikowski, Chandon and Gierl, 2006). To measure satisfaction, we choose the D-T (Delighted – Terrible, Westbrook, 1980), which has been used in the framework of research on consumer behavior and has proved to be reliable. We also measure a general appreciation of pharmacy satisfaction on the same scale.

The Data

The study is based on a consumer satisfaction survey carried out over 1500 people older than 18 who live in two regions of France (Poitou-Charente and Midi-Pyrénées). The survey was administered by electronic mail. 558 persons from different households responded to the questionnaire. No follow-ups were sent because the responses to questions were entered directly on the Internet, using the LimeSurvey software. Since anonymity was completely respected, we are unable to know who filled in the questionnaires and who did not. For this reason, it would have been difficult to send follow-ups. The questionnaire includes a first section concerning patient characteristics (age, sex, number of children, profession), his shopping habits at the outlet (pharmacy client, regularity of visits), and the nature of his purchases (prescription and over-the-courter drugs, personal care and hygiene products or cosmetics). The second section of the questionnaire evaluates the satisfaction criteria proposed by Foscht *et al*. (2006). Twenty elements of pharmacy service, which may be regrouped into five categories (Appendix A1), were evaluated (Appendix A2).

The descriptive analysis necessary for any statistical treatment enables us to characterize the sample (see table A3.1, appendix A3). The average age of the customer in the sample is 46 (the average age in the French population over 16 for the year 2009 is around 47 years but the sample population under 25 and over 60 represents respectively 14.6% and 13.6%, which is slightly underrepresented in comparison to the national distribution). From the point of view of customer behavior, half the people enter a pharmacy at least once a month. Their presence in the pharmacy is essentially linked to the purchase of medicine prescribed by a doctor, one person out ten never buying non-prescription drugs, and one out of three never buying and personal care and hygiene products or cosmetics.

Determination of the One-dimensional Axis Associated with Satisfaction

On the whole, customers are satisfied (Appendix A2). For all the questions related to satisfaction, the scale employed varies from 1 to 7. With a score of 4.90 out of 7, the weakest average registered is for the *quality/price ratio* element, 9% declared they were dissatisfied and 27% were undecided. The highest average registered is for the *competence* element with a score of 5.94 out of 7, less than 2% declaring that they were dissatisfied, 8% being undecided. The average associated with the level of general satisfaction is 5.63. 10% have an unsettled opinion. On the whole, regardless of the element under consideration the number of dissatisfied (having checked a score inferior to 4) is very low and represents less than 8% (except for the *self-service space, access to shelves* and *quality/price ratio* elements, Appendix A2).

Confirmatory factor analysis shows that all the criteria selected for measuring satisfaction can be reduced to a single axis (Foscht *et al*., 2006), which in our study represents 55% of the variance (principal component analysis, PCA). All the elements have factor weights greater than 0.5, except for *store location* (0.48) and *store accessibility* (0.46). These weighs being

nevertheless relatively high, we have retained them for the remainder of the analysis in order to work with the same satisfaction criteria as those validated by Foscht *et al*. (2006). To verify the internal coherence of the scale and analyse its reliability, we calculated Cronbach's alphas coefficients using SAS software. All are greater than 0.9, they demonstrate that the measurement tool thus developed does possess good-quality reliability. The coordinates associated to that axis will then be used to define the profile of the most and least satisfied customers.

The retained statistical model: the Tetra-class Model

Several methodologies are available for use. With her tetra-class model, Llosa (1997) takes into consideration two classes (positive versus negative). In the modeling proposed by Brandt (1988), Mitall, Ross and Baldasare (1998), Brandt and Scharioth (1998), or also Vanhoof and Swinnen (1996), three classes are considered (positive, neuter, negative). However, the small number of dissatisfied respondents – as much for the level of general satisfaction as for the various elements of pharmacy service, see Appendix A2 – hinder the use of techniques capable of measuring satisfaction and dissatisfaction on the basis of three classes. We have therefore selected Llosa's (1997) tetra-class model, which has the advantage of presenting, by means of simple and visual mapping, the weights in general satisfaction of the elements under consideration. In addition, this model possesses an established external validity with regard to various research projects in which it has been used, in the framework of quite varied service activities (Bartikowski and Llosa, 2004; Sabadie, Prim-Allaz and Llosa, 2006; Merdinger-Rumpler, 2009; Clerfeuille *et al.*, 2008, 2009 for recent applications).

In the tetra-class model, the contribution of elements to satisfaction is calculated through correspondence factorial analysis (CFA). The modalities of the item *general satisfaction* and

of alls the elements capable of influencing satisfaction (obtained in the previous PCA) are reduced to two classes (positive satisfaction/negative satisfaction, which in the context of this study amounts, to positive satisfaction/non-positive satisfaction). The decomposition into two modalities is founded upon the statistical method of segmentation depicted in classification and regression trees (the C&RT models). This method permits the separation of the scores of each element into two groups that have the greatest power of discrimination, the C&RT binary segmentation algorithm identifying homogenous subgroups by generating "cut points" in the classification tree (Breiman, Friedman, Olshen and Stonce, 1984). Such segmentation makes it possible to obtain two classes whose inter-class variance is maximized and whose intra-class variance is minimized. For most of the 20 elements, the positive modalities were the scores 6 and 7, the negative (non-positive) modalities assuming other values (see Appendix A2). This analysis supposes that a single factorial axis suffices to explain the variance of the set under study. This axis is interpreted as an axis of satisfaction along which figure two modalities of general satisfaction and two modalities for each element (positively and negatively evaluated).

From the CFA, we obtain the coordinates of two modalities for each element. A simple way to represent graphically the results of this analysis is to consider a plane in which points along the abscissa show the contribution of elements to the level of general satisfaction of the client when he considers them negatively and in which points along the ordinate show the contribution of elements to the level of general satisfaction when he considers them positively. The coordinates are normalized using the index of general satisfaction. The normalization makes it possible to establish the frontiers and distinguish the four categories of elements that are defined in the framework of multifactor models. So, services are classified in one of the four categories according to the way in which they affect the client's experiences.

The Results

Figure 1 allows us to observe that multifactor model may be used with French data to study patient/consumer satisfaction in terms of retail pharmacy services. The elements of pharmacy services jointly contributing to the patient/consumer satisfaction present different contributive modes. This conclusion is compatible with the research done on Bulgarian data (Clerfeuille *et al*., 2008 and 2009).

The distribution of pharmacy service elements according to the contributive modes as defined by the tetra-class model is the following:

- "Keys" factors: *competence*, *personnel friendliness*, *listening skills* and *medicine in stock*,
- "Plus" factors: *pharmacy location, store accessibility, self-service area, medicine quality* and *quality/price ratio*,
- "Secondary" elements: *waiting time, lighting, entrance atmosphere, shop design, freedom of movement in the pharmacy, information, access to products and to shelves, presentation, window display*.

We note that there are no "basic" elements.

Figure 1 here.

Figure 1 shows us that the elements of pharmacy services linked to staff and to pharmacists are "key" elements. The "key" elements strongly contribute in all cases to the degree of general satisfaction. These specific elements, related to the heart of the pharmacy profession (*competency, listening skills, personal friendliness*), confirm the patient's attachment to the pharmacist's interpersonal skills and knowledge. When the customer goes to the pharmacy, he entrusts his health and well-being to the pharmacy personnel. A relationship of confidence must therefore become established between the two. This relationship can only be durable if the customer is satisfied with service elements such as

competence, listening skills or personnel friendliness. Positive evaluation of these elements exerts a positive effect on general satisfaction, while a negative evaluation acts negatively. These results are similar to those Foscht *et al*. (2006) presented in their study of the Austria pharmacies whose economic model of pharmaceutical distribution is identical to the French model. But, the results differ from those Clerfeuille *et al*. (2008, 2009) obtained from a study in Bulgaria. These authors found that the service elements linked to pharmacy practice (*personal friendliness, competence, clarity of explanations, time spent with the pharmacist, consultation time*) are "basic" elements. It appears that the French customer seems to be more attached to these elements (which he considers as "key") than the Bulgarian customer.

From figure 1, we can see that the atmosphere of the pharmacy, characterized by the first impression and by product presentation, is a "secondary" element.

In certain circumstances (clothes or food purchase, for example**)** the atmosphere at the sales outlet may have more importance that the product itself (Kotler, 1973). Generally they are considered as "basics" elements. In Clerfeuille *et al.* (2008, 2009) atmosphere is a "basic" element. Here, the atmosphere is characterized by two types of factors. The first type is related to product presentation, which is to say: to the deliberate conception of space inside the pharmacy itself (access to shelves, to products, the ambiance, lighting, self-service areas…) for the purpose of producing certain effects on the people. The second type is linked to the conception of the pharmacy's exterior, put otherwise: to the first impression (entrance, shop window…). Generally speaking in France, pharmacies are not considered to be commercial outlets, the Order of Pharmacists declaring that the pharmacist has "public service missions" and must "guarantee the respect for the requirement of public health and consumer protection". In addition, the clients who enter the pharmacy come generally for medicines that are in most cases physically inaccessible. The before-the-counter service elements are

relatively undeveloped in France, or limited to over-the-counter drugs, personal care and hygiene products, and vitamins and food supplements.

With the exception of the *self-service area*, the "secondary" elements, which are all related to merchandizing within the pharmacy, do not have a primary role in satisfaction. Overall satisfaction is not increased by the outlet's layout (*window display*, *ease of movement within the pharmacy*, *access to products and to shelves*, *presentation or shop design*…). This finding truly raises questions concerning the managerial practices and organizational preferences of pharmacists, notably of those belonging to pharmacist groups, who make use of these service elements to compare favorably with their competitors. We nevertheless note that such results conflict with those Foscht *et al*. (2006) observed in Austria. Indeed, they found that the first impression elements are essential to the Austria customer's satisfaction.

The *self-service area* is evaluated in this research as a "plus" service element. In the French context, while such space does exist in some pharmacies, it plays no role in dissatisfaction and is not an attraction for customers. They enter a pharmacy to have medicine delivered to them and not to stroll about in a self-service area as in a classic commercial outlet. However, when this space is positively evaluated, the service element does contribute to satisfaction since it permits access to pharmaceutical products and to frequently used personal care and hygiene products and cosmetics. This result is comparable to the finding of Foscht *et al*. (2006) in Austria. Clients go to the pharmacy essentially in a medical purposes and are not very interesting by pharmacy arrangement and atmosphere, as opposed to consumers.

Figure 1 shows that some elements related to the quality of pharmacy services are more important for satisfaction customers than others.

The *quality/price ratio* of medicine is usually found among the "plus" elements because in most cases the customer does not pay for the drugs delivered in pharmacies. Even so, if the

client had to pay for his medicines, as for over-the-counter drugs, personal care, hygiene products and cosmetics, it seems unlikely that he would be able to appreciate their quality/price ratio. It is understandable therefore that this criterion, which affects his budget, may in the case of a positive evaluation, strongly contribute to his overall satisfaction. However, his lack of expertise may also explain why this service element detracts weakly from his general satisfaction when negatively evaluated. In Bulgaria, pharmacies'customers regard it as "basic" and this element only brings dissatisfaction when it is negatively considered. This appreciation is only meaningful if the customer purchases the medicine and has the opportunity to assess the medecine's price and its quality. This appreciation has to be taken caustiously considering the customer's lack of knowledge and information especially since medicines are nontraditional goods. We then assume that this appreciation depends on the medecine's efficiency and its price. It would explain why *Medicine quality* is also a "plus" element, people would associate quality at the drug efficiency. …

The *waiting time* is a "secondary" element. Waiting time does not enter the client's satisfaction or dissatisfaction. The delivery of medicine is traditionally not done in urgency, and it seems normal that the practitioner take his time for pharmaceutical counseling. This waiting time seems to be integrated in the client's consumption experience and does not belong to his high-priority pharmacy service elements. It should be noted that some pharmacy outlets attempt to develop counters for pharmaceutical consultations within the pharmacy, which will increase the customer's waiting time.

Lastly, the *medicine in stock* is a "key" element for the customer. The pharmaceutical distribution monopoly obligates the pharmacist with respect to the availability and the quality of the drugs. This obligation makes failure of this service quasi-impossible. Nevertheless, it may occur due to stock management problems, or to lack of storage space, that the totality of the prescribed medicine cannot be provided when the client comes into the pharmacy. He is

then forced to come a second time. Customers' purchase experience shows this element to be essential, leading to the belief that they cannot accept leaving the pharmacy without their medicine or that they frequently face stock shortages.

These four last results are the same as Foscht *et al.* (2006) but are different from those obtain by Clerfeuille *et al.* (2008, 2009) for which there are considered as "basics" elements.

Finally, from Figure 1 we can see that the service elements related to outlet location are "plus" elements. The size of pharmacy sales regions is subject to French regulation fixing quotas for pharmacy implantations. France has an important number of pharmacies throughout the territory in both rural and urban zones. Clients can find a pharmacy near his place of residence or his healthcare center. Access to the store is often facilitated by parking space reserved for the clientele or by the existence of parking space belonging to the commercial area when the pharmacy is in a shopping mall. So, these "plus" elements (*store location* and *accessibility*) strongly contribute to the level of overall satisfaction when they are positively evaluated or detract weakly in the opposite case. The Austria study by Foscht *et al*. (2006) does not show a significant link between these elements and overall satisfaction, emphasizing that the patient/consumer may choose a competitor less well situated and accessible if he judges the pharmacy services are better there.

Discussion, Implications, Limits and Directions of Research

Discussion

Consumers or patients?

Do pharmacis'customers behave as patients or consumers? By comparing satisfaction studies thanks to a tetra-class model, we will be able to notice if the services'factors used to measure satisfaction are differently evaluated by customers considering a different purchase context,

the type of goods purchased and the type of retail outlets. These studies are based on observing hypermarkets'customers'satisfaction when purchasing consumer goods (Llosa, 1997), restaurants'customers purchasing services (Llosa 1996, Mouette 2005) and pharmacies'customers (Clerfeuille *et al.* 2008, 2009). If we obtain a positive answer, we will be able to verify that French pharmacies'customers behave more as patients than as consumers.

Table 2 here.

Although our items'ranking cannot be directly compared to Foscht's *et al.* (2006) we can still notice a relative resemblance between the results obtained except for four elements? Indeed, the *window display* and *waiting time* items do not have the same effect. In Foscht *et al*'s study, these results are included within a set of elements. If they were considered separately, the effects might be different. The main difference between the two studies lies in the location and accessibility of pharmacies. These elements are ranked as positive for us but have no effect for Foscht *et al.* Differences in location strategies and networks could account for that difference. However, as was the case before, our results are very different from those obtained by Clerfeuille *et al.* French and Bulgarian customers seem to have different buying behaviours that we tried to explain earlier on.

Let us now compare our results with the results obtained for basic consumer goods (Table 2). The *first impression* elements (Appendix A1) have been ranked similarly for pharmacies and restaurants. Pharmacies'customers seem to behave like service consumers. As for the other elements, the ranking is different. Regarding consumer goods, the items linked to the staff are "secondary" (items have little impact on the level of satisfaction) there are "keys" (factors contribute to the satisfaction and also to the dissatisfaction) for pharmacies. *Stock* is also very important for customers'pharmacy while there has no impact for "normal" goods or services.

The *waiting time* item does not count for French pharmacies' customers ("secondary" factor) but it does ("basic" factor) for Bulgarian pharmacies'customers. As French customers behave more as patients than as consumers, they probably consider waiting as somthing both normal and necessary. Undeniably, the perception of that waiting time in a French pharmacy cannot be evaluated in the same way as the waiting time in restaurants and hypermarkets that customers regard as a "key" element. We may accept to have to wait in a pharmacy but it also seems logical to be more sensitive to the time spent waiting when being served in a restaurant (pleasure time) or when doing shopping in a hypermarket (time lost). As for the *quality/price* element, the results obtained are also quite disimilar: considered as "plus" for French pharmacies customers, "basic" for Bulgarian pharmacies'customers and "key" for consumers of services (as in restaurants). In the case of the satisfaction study carried out among restaurants, the appreciation is of course more simple to carry out, which easily explains why this element is "key". Consumers can easily evaluate the quality of the meal and service compared to the price paid. This element is considered as basic for hypermarkets'customers since they expect a good *quality/price ratio* from the basic consumer goods they buy. If it is not the case, this factor negatively weighs on consumer satisfaction. In France, pharmacies'customers seem to behave more specifically as patients than as customers. We can notice that Bulgarians satisfaction towards pharmacy is close to that of consumers towards goods (grandes surfaces). Bulgarians seems to consider product of pharmacy as "normal" goods.

From the most satisfied customers to the least satisfied: a profile

In order to complement our tetra-class analysis, we have defined the profile of the most and least satisfied customers. For that purpose, we have used the individual characteristics appearing in the studies: area of residence, age, household size corresponding to the number

of children per household, type of purchase (medecines bought with and without a prescription, para pharmaceutical products), the social category was left out because of a lack of information. We have considered two econometric models: a Generalized Least Squares (GLS) regression and an ordered probit model (See Appendix A3 for further information). The GLS regression was carried from the coordinates of the main axis obtained within the PCA. This factor measures the effects of the different elements likely to impact the level of satisfaction. The ordered probit model was based on the answer made to the assess the overall satisfaction. Based on the segmentation method C & RT, three different levels of answers have been considered: rather unsatisfied (From answer 1 to 4), rather satisfied (Answer 5) and very satisfied (Answer 6 and 7). The results obtained with each method are quite similar (Table A3.2, Appendix A3).

The most satisfied customers are also the oldest (over 60) and those living in rural areas. For them, pharmacies seem to be assimilated to a dynamic place generating social links and a place where they feel well.

The weakest satisfaction level concerns customers who frequently visit pharmacies to purchase para pharmaceutical products and customers living in urban or suburban areas. As there is a fiercer competition between pharmacies and para pharmacies, they are more demanding satisfaction wise. Furthermore, there is no significant effect of the presence or absence of children, the purchase of medecines and the area of residence on the level of satisfaction.

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Implications

The number of articles devoted to health and marketing demonstrates how much this theme has opened new fields of research over these past years (Stremersch and Van Dyck, 2009). The study of satisfaction associated to elements of pharmacy service, which is still

rare, fits into this dynamic. It notably enables the pharmacist – facing a future of evolving pharmaceutical distribution – to adapt managerial practices. It also contributes to permanently anchoring pharmacies in the medical value chain (Stremersch, 2008), guaranteeing in this way their place as a central link in French pharmaceutical distribution.

The analysis of pharmacy satisfaction using the tetra-class model leads to important managerial implications for practitioners on two levels.

First of all in the short run, stressing service elements contributing to customer satisfaction enables the pharmacist to define his managerial actions more clearly. The pharmacy's marketing strategy is played out today in front of, as well as behind, the counter.

In the first case (in front of the counter), the issue is to propose the pharmacy's offer, placing it within the patient/consumer's reach without restriction. Our research shows that on this level, merchandizing at the sales outlet seems to have no effect on the patient/consumer's satisfaction (cf. "secondary" elements). This finding truly raises questions about pharmacy managerial practices and operational choices of pharmacies under pharmacists' business names. Observing the evolution of the pharmaceutical distribution market in Europe, pharmacy banners are being organized notably by developing pharmacy sales points modeled on the classic commercial outlet. The layout of the area in front of the counter permits the patient/consumer to reach the pharmacy's offer of pharmaceutical and over-the-counter drugs and personal hygiene products in the widest sense. In time, it should permit an increase in the amount of the customer's average spending. Since the service elements relating to merchandizing are considered to be "secondary", pharmacists are within their rights to wonder about the soundness of this choice today. However, it is well to note that the *self-service area* is considered as a "plus" element that does contribute to the consumer's satisfaction. This element constitutes a promising lever of attraction for the future due to the over-the-counter and pharmaceutical drugs (reimbursed or not), known as optional

prescription drugs, that today are freely accessible in pharmacies and de facto present in the self-service area.

In the second case (behind the counter), we are truly dealing with the service elements inherent to the pharmacist's profession (cf. "key" elements). In this domain, beyond the managerial preoccupations underlying the evolution of pharmaceutical distribution, the pharmacist can see that his role has been strengthened with respect to services contributing to patient satisfaction.

It results from our study that pharmacies'customers in France often adopts a dual attitude related to the type of products purchased. If customers can be considered as consumers in a traditional commercial relation environment, he comes a patient when purchasing medecines since medecines still remain a non traditional product. Its purchase frequency being low and well thought after. Customers often want to get information when purchasing this type of products which require the presence of an expert (the pharmacist). Customers must deal with a lack of information linked to the complexity of medecines.

That is why French pharmacists must take that peculiarity into account in the perspective of the strategic development of French pharmacies. Contrary to what everybody thinks, French customers do not seem ready to purchase self-service medecines even if they are receptive to the self-service area. This leads to the question of developing the opportunity that a self medication shelf would represent. Although this behavior does not limit the future development strategies of pharmacies, it proves the real importance of the pharmacist's presence for the patient.

In the medium term, if the situation of market monopoly in which pharmacists find themselves were to disappear, it may be imagined that pharmacy owners would implement commercial policies that are closer to those observed in classic commercial markets.

As for the medicine delivered on prescription, competition will not be in pricing but rather in services (*customer reception*, *competence*, *waiting time*, *medicine in stock*). These elements being "key", it is important that they be given great attention.

For personal care and hygiene products and cosmetics, non-prescription and/or self-service drugs, competition may in addition take place through pricing. Commercial and managerial policies will have to be modified and adjusted in function of the service elements of satisfaction defined by the model.

Limits and Directions of Research

Our research presents a few limits, which would be well to evoke. In our, we started off from the principle that customers were homogenous. Yet, it could very well be that client expectations may not be the same according to the reason for the presence in the pharmacy, to their age or their habitation zone. Clerfeuille *et al.* (2008, 2009) show for example that the elements characterizing satisfaction are different by segmenting their sample in function of the patient/consumer's habitation zone (rural or urban). The analysis of the customer profiles highlights three major factors/elements: the area of residence, the reason why they visit the pharmacy and the age. So, segmented analyses in terms of these three elements could be done as it is possible to modify the perception and degree of satisfaction.

In addition, we did not distinguish in the analysis the organizational mode of the pharmacy outlet patronized by the persons questioned. Indeed, while pharmacists are traditionally "independent", some of them have joined pharmacy groupings, which are groups of pharmacists – who are financially unconnected owners of the license (the pharmacist is owner of one or two pharmacies, for a more precise definition, see Moinier, 2009). In this way, the pharmacy grouping assures their outlet members benefit from the network's own merchandizing, integrating a whole set of specific services. The differentiation of these

pharmacies operating under a group of pharmacists is essentially the result of this group contribution. In view of the our findings in this study, it would be interesting to compare the customer's satisfaction according to whether or not the pharmacy patronized belongs to a pharmacy operating under a group of pharmacists. Indeed, are the service elements still classed as "secondary" by the pharmacies working in a group that pays particular attention to the outlay and atmosphere of the sales outlet? These two last remarks would necessitate performing this investigation by taking into account the two segmentation types.

Furthermore, we have not accounted for the customer relationship that plays a role in the consumer's overall satisfaction (Garborino and Johnson, 1999) although the patient does seem to attach great importance to the relationship with the pharmacy's owner (Moinier, 2006). In the end, loyalty to a sales outlet would seem to be the objective for pharmacists to attain by mobilizing the most pertinent pharmacy service elements. However, the relation between satisfaction and loyalty is not that immediate, and the mediating variables that have been revealed in the literature need to be studied. Consumer commitment and confidence (Morgan and Hunt, 1994; Macintosh and Lockshin, 1997; Garborino and Johnson, 1999) could for example have an important role in explaining this link.

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Appendix A1. Customer Satisfaction and the Austrian Retail Pharmacy Industry seen from a Growth-Oriented Perspective (Foscht *et al*., 2006)

First Impression	Presentation of products	Staff and Pharmacist	Quality/price ratio	Location
Shop design	*Possibility to move*	*Friendliness*	*Medicine in stock*	*Store location*
Window display	*freely*	*Expertise*	*Quality of medicine*	*Store accessibility*
Shop lighting	*Easy to find products*	*Compassion*	*Waiting time*	
Entrance	*Access to shelves*		*Quality/price ratio*	
Atmosphere	*Self-service area*			
Information	*Product presentation*			

Appendix A2. Elements of General Satisfaction and descriptive Statistics Associated with the Different Elements in the Satisfaction Scale

Service element	Mean	Standard deviation	Minimum	Maximum	C&RT*	Proportion of C&RT scores (in %)	
						1-3	4
General satisfaction	5.6	1.0	1	7	6-7	1.3	9.7
Shop design	4.6	1.1	2	7	6-7	2.7	12.4
Window display	5.1	1.1	1	7	6-7	4.5	29.6
Shop lighting	5.5	1.0	2	7	6-7	1.1	13.8
Entrance	5.4	1.1.1	2	7	6-7	3.0	18.1
Atmosphere	5.4	1.1	1	7	6-7	3.4	14.5
Information	5.2	1.2	1	7	6-7	7.0	17.0
Possibility to move freely	5.3	1.2	1	7	6-7	7.5	16.7
Easy to find products	5.2	1.2	1	7	6-7	5.6	19.5
Access to shelves	5.2	1.1	1	7	6-7	6.3	21.7
Self-service area	5.1	1.2	1	7	5-6-7	9.1	22.0
Product presentation	5.3	1.1	1	7	6-7	4.7	17.6
Friendliness	5.9	1.1	1	7	6-7	3.2	7.7
Expertise	5.9	1.1	1	7	6-7	2.9	6.8
Compassion	5.9	1.1	1	7	6-7	3.4	7.2
Medicine in stock	5.4	1.1	1	7	5-6-7	5.6	12.5
Quality of medicine	5.6	1.0	1	7	6-7	1.6	13.6
Waiting time	5.1	1.1	1	7	6-7	8.6	16.7
Quality/price ratio	4.9	1.2	1	7	5-6-7	9.3	26.9
Store location	5.8	1. 5	1	7	6-7	2.7	8.2
Store accessibility	5.7	1.2	1	7	6-7	4.8	10.0

* Modalities characterizing positive satisfaction, grouped according to the classification and regression.

Appendix A3. Descriptive statistics and estimation results

Table A3.1. Descriptive statistics

	mean (in %)	minimum	maximum
ACP Factor	0	-3,1	2,1
Dissatisfied	11.0	0	1
Rather satisfied	31.0	0	1
Very satisfied	58.0	0	1
femme	56,5	0	1
Less than 25 years olds	14.6	0	1
Between 25 and 40	23.8	0	1
Between 40 and 60	48.0	0	1
Greater than 60	13.6	0	1
Medecine with prescription purchase	58.4	0	1
Medecine without prescription purchase	57.2	0	1
Product purchase grudstore	37.5	0	1
Urban residential area	35.7	0	1
Suburb	25.3	0	1
Rural	39.0	0	1
Without child	29.2	0	1
One child	12.9	0	1
Two children	36.7	0	1
More than two children	21.2		
Leave in Midi Pyrénées	44.8	0	1
Frequency of visit : every week	4.7	0	1
Every two week	18.3	0	1
Every month	50.2	0	1
Less than every month	26.8	0	1

The ordered probit model

We construct the variable Y which takes three values: $Y = 0$ when the individual is dissatisfied, $Y = 1$ when the individual is rather satisfied and $Y = 2$ when the is very satisfied

We model the variable Y with an ordered probit model, as follow:

$$Y = k \iff \alpha_k < Y^* = X'\beta + \varepsilon \leq \alpha_{k+1} \quad for\ k \in \{0,1,2\}$$

We impose $\alpha_0 = -\infty, \alpha_3 = +\infty$ and $\alpha_1 = 0$. $\alpha_2 = L$ has to be estimated. Y^* is the latent variable associated to *Y*. The model is estimated by maximum likelihood method, for more details see for example Greene (2008).

Table A3.2. Estimation results

	GLS	Ordered Probit		
	coefficient	coefficient	marginal effect	
			dissatisfied	rather satisfied
Intercept	-0,043	1,217***		
	(0,222)	(0,272)		
woman	0,105	0,018	-0,0032	-0,0035
	(0,089)	(0,106)		
Age (ref : less than 25)				
Between 25 and 40	0,132	0,158	-0,0287	-0,0313
	(0,157)	(0,186)		
Between 40 and 60	0,233	0,301	-0,0545	-0,0595
	(0,164)	(0,196)		
Greater than 60	0,348*	0,236*	-0,0426	-0,0466
	(0,192)	(0,133)		
Medecine without prescription purchase	-0,038	0,132	-0,0240	-0,0262
	(0,089)	(0,107)		
Medecine with prescription pruchase	-0,031	0,110	-0,0200	-0,0218
	(0,088)	(0,107)		
Product purchase grudstore	-0,203**	-0,209*	0,0378	0,0413
	(0,091)	(0,109)		
Residential area (ref : rural)				
Urban (town)	-0,327***	-0,247**	0,0446	0,0488
	(0,100)	(0,122)		
Suburb	-0,243**	-0,331***	0,0600	0,0655
	(0,108)	(0,131)		
Number of children (ref : more than 2)				
Without	-0,036	0,039	-0,0071	-0,0078
	(0,151)	(0,184)		
One	-0,170	-0,207	0,0374	0,0408
	(0,153)	(0,182)		
Two	-0,084	0,077	-0,0139	-0,0152
	(0,118)	(0,144)		
Region of France : Midi-Pyrénées	0,092	-0,027	0,0050	0,0054
	(0,087)	(0,105)		
Frequency (ref : less than month)				
Every week	0,291	-0,059	0,0106	0,0116
	(0,217)	(0,261)		
Every two weeks	0,245	0,053	-0,0097	-0,0105
	(0,141)	(0,164)		
Every month	0,027	-0,138	0,0249	0,0273
	(0,102)	(0,123)		
limit L		1,068***		
		(0,071)		

Legend : * p<0.1 ; ** p<0.05 ; *** p < 0.01

N=558 ; R2 of the GLS regression : 0.06. Probit model with only two alternatives (dissatisfied, satisfied) gives exactly the same results in term of significant coefficients.

Marginal effect :For example, in average for women, the probability to be dissatisfied is lower of 0.32 point and the probability to be rather satisfied is lower of 0.35 point than for men.

Table 1. Applications of Sales Monopoly for Pharmaceutical Products

Level of sales monopoly	European countries	Products excluded from monopoly
Monopoly applies to the sale of medicine, including over-the-counter drugs, vitamins, and food supplements	Spain, France, Greece, Italy	• Personal care and hygiene products, plus cosmetics
Monopoly of sales for medicine	Austria, Belgium, Finland, Luxembourg, Czech Republic	• Vitamins and food supplements • Personal care and hygiene products, plus cosmetics
Monopoly limited to certain medicine (excluding over-the-counter drugs)	Germany, Denmark, Norway, Netherlands, Poland, United Kingdom	• Vitamins and food supplements • Personal care and hygiene products, plus cosmetics • Over-the-counter drugs
No monopoly	Portugal, Sweden	• All

Figure 1. Pharmacy Service Elements Displayed in the Tetra-class Model

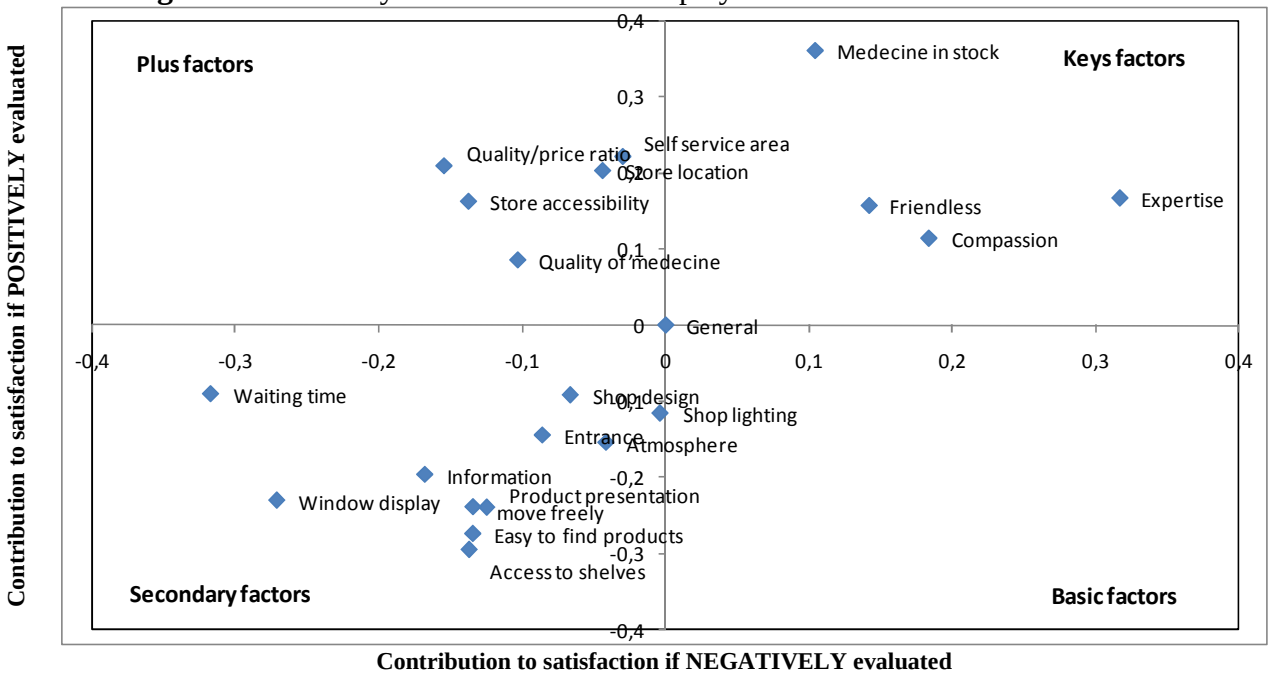

Table 2: Classification of items based on store visits

elements	Pharmacies			Hypermarket	Restaurant
	Bonnal Moinier	Foscht and al.	Clerfeuille and al.	Goods	Services
Window display	secondary	s	basic	key	secondary
Shop lighting	Secondary	ns	basic	basic	secondary
Access to shelves	secondary	ns	basic	Basic	-
Friendliness	key	s	basic	secondary	secondary
Expertise	key	s	basic	secondary	secondary
Compassion	key	s	basic	secondary	secondary
Product in stock	key	s	basic	basic	basic
Quality of product	plus	s	basic	-	-
Waiting time	secondary	ns	basic	key	key
Quality/price ratio	plus	s	basic	basic	key
Store location	plus	ns	secondary	secondary	key
Store accessibility	plus	ns	secondary	secondary	secondary

Lecture : ns (secondary) and s (key): non significant and significant in the Foscht *et al.* analysis (basic and plus can not be obtained in Foscht *et al.* analysis).
Studies about goods have been done by Losa and studies about restaurants have been done by Llosa and Mouette (2005).
Remark : Only comparable items have been considered.