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Perceived unfairness of prices resulting from yield management practices

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Abstract
If yield management is commonly used, studies dealing with customers reactions are not frequent. Yield management techniques, which aim to optimize firm returns, leads often to disadvantageous situations for customers. The object of this article is to study the consumer perception of Yield Management (YM) with an example in the hotel sector. Hotels use these practices in order to increase their incomes. However, the economic literature suggests that if YM practices are considered to be unfair, they are likely to influence customers’ purchasing intentions negatively, in particular for loyal customers.

We explore four YM practices that might be suitable in hotel context through an empirical study of the behavior of 505 customers. We use non parametric tests to analyze the perception of YM practices and Anova tests to identify some relationship between the variables which can explain the behavior of customers.

Our empirical analysis shows that the assumption that the YM induces dissatisfaction in all circumstances is rejected. But when a practice of YM is perceived as unfair, it causes a loss of customers. However, the manner of presenting the YM practices to consumers (positive or negative frame) has a considerable influence on their perception. Lastly, the price changes induced by the YM are not perceived more unfavorably by the loyal customers. From this point of view, there are several managerial levers in the communication of tariff practices and the management of loyalty programs to avoid or reduce the conflicts with customers.

Keywords: Equity, fair price, perceived unfairness, price sensibility, yield management.

1. Introduction
Yield management is a management tool used to maximize profits from limited available capacity, such as airline seats or hotel rooms. It manages the capacity (9) in order to optimize the firm’s overall revenue (14). Yield management is based on demand segmentation and price adjustments in real-time (17) so as to allocate the best service, to the best customer, at the best price, at the best time.

Yield management is very advantageous for service companies. It is a fundamental tool used to optimize the overall profit of the company and its network (9). However, if yield management increases a company's profitability, the consequences for the customers are not always as positive. During the low season, customers benefit from the practices of yield management because they can take advantage of rate reductions (and sometimes additional perks in terms of services). The customers are then in a positive position since the price variations incurred due to yield management means that they pay a lower price. However, at other times, the customers may find themselves paying a high price for standard services. They are then likely to perceive this situation as being unfair. The perception of unfairness with regards to the prices charged by a company can be very risky for the latter. When there is a perception of injustice, the customer directs his dissatisfaction towards the main source of the injustice. In fact, the customer’s dissatisfaction will be turned towards the brand or the seller (19). The consequences can be dramatic: the customer may not only break off all commercial
transactions with the seller but also spread negative information about him, or behave in a detrimental way (5). As a result, yield management can have very unfavourable consequences for the firm if customers have a perception of unfairness. Thus, if yield management practices are advantageous for service industries, they must also be seen as fair by the customers, including in situations where the customers are disadvantaged. In other words, it is fundamental that price increases induced by yield management are seen as fair in the eyes of the customers. Consequently, it is important to know whether it is possible for yield management practices which are unfavourable for the customers (for example practices leading to a price increase), to be regarded nevertheless as being fair. More precisely:
- Among the practices of yield management which disadvantage customers, which ones are perceived as being unfair, and above all, which ones are perceived as being fair?
- What are the levels of perceived unfairness for each of these practices?
- Is this perception of unfairness (or fairness) variable according to customer profiles (their past experience, price consciousness, etc), and the characteristics of yield management practice?

These questions are of great interest to management strategy. On the one hand, if there exist yield management practices which disadvantage customers but which are nevertheless judged as fair, the advantages for the firm are double: not only does the firm benefit from optimal rates for services, but in addition, the customer’s image of the company remains untainted. In addition, being able to evaluate the perceived levels of unfairness of yield management practices makes it possible for decision makers to develop their strategies for regulating availability whilst controlling the consequences on their customers. Lastly, if it is proved that the level of perceived unfairness depends on customer profiles, this will enable decision makers to define yield management strategies according to different customer target groups.

To know what conditions contribute to fair yield management, we propose firstly to outline the definitions and practices of yield management, and to understand how customers subjected to these practices may perceive them as unfair. In the second part, we will put forward the characteristics of yield management practices and the characteristics of customer profiles which favour a perception of fair price. The resulting schema integration will be subjected to a field study in a hotel context.

If yield management is advantageous for service companies, for customers it means reduced or higher prices for the service. Consequently, it does not necessarily represent an advantage for them. In the case of an unfavourable price variation for the customers, they may perceive unfairness. To know if a price is fair or unfair one must make a judgment on the idea that a result (the posted price) or that the process enabling one to reach a result (the yield management system creating the posted price) is reasonable and acceptable (4). The fair price is the price which a customer would be ready to pay (6). But the level of perception of whether a price is unfair is based on a comparison. To evaluate to what extent a posted price is unfair comes down to comparing this price to a regular price, a reference or a standard. The customer evaluates if the difference or the absence of difference between the price charged by the seller and a price used for comparison is acceptable (19). The price comparison can be explicit or implicit. It is explicit when the customer really does have in mind a price or several prices for comparison: the price paid by another customer, the price paid previously or the price posted by a competitor. It is implicit when the customer evaluates the unfairness of the price but without being able to compare it to a price which is really charged. The comparison is then made simply with an expected low price; a price that the customer believes is the right price considering the value of the goods for example. In the case of yield management, the level of perceived unfairness results from an evaluation of the difference between the posted price and the price which the customer could have paid without the price variation, without the yield management practice. When the gap between the two prices of comparison is high, the customer’s judgment can be perturbed (20, 10), and the perception of unfairness increased. As we saw previously, the consequences of this perception of unfairness can be serious for the firm. The perception of an unfair price is a determining factor in the evaluation of the service offered and the acceptability of the price (6). Moreover, it has irremediable consequences on the behavior of the customers and, a fortiori, the performance of the company. Even if a price variation is unfavourable for the customer, the posted price is not necessarily perceived as unfair. This depends on the characteristics of yield management, and on the profile of the customer. Three factors related to the characteristics of yield management seem likely to influence the perception of unfairness of prices resulting from yield management: the explanation, the equity, and the distinction of the service offered.

**The explanation**

When determining a selling price (with rebate or surcharge), it is important that customers are able to understand the reasoning behind it (13). To be
perceived as fair, the posted prices must be logical, transparent, clear cut and fixed so that they cannot be called into question (3). What can lead to a perception of an unfair price may be both the posted price and the reasons why this price is posted (19). Thus the reasons why a given price is posted have an influence on the perception of unfairness of the price. In the case of an increase in selling price, these reasons must be translated either into additional cost for the firm, or into a gain for the customers. However, this explanation is not a sufficient condition for considering the price as being fair.

Equity in terms of costs and benefits

Discriminatory pricing policies are not always easy to accept for customers, especially in the sectors where the practice is relatively new. Thus in the hotel sector the customer may have difficulties accepting that a room is more expensive for him than for another customer, or more expensive than if he had reserved it a few days before (11). This problem is all the greater as the customers can discuss between themselves in the same hotel. Thus the price difference must be justified by arguments which appear fair in the eyes of the customers. Procedural justice theory aims at understanding how procedures subjacent to the determination of revenues have an influence on perceptions of fairness (18). And Equity theory insists on the importance of the equality of revenues between the parties taking part in the transaction (1). What individuals receive (people, groups of people, sellers, organizations...) taking part in an exchange relationship must be proportional to their investment in the relationship. This condition is necessary to the perception of a fair exchange relationship (1).

A clear distinction of the service offered

Finally, the customers apply their judgment of the price of a service on an overall assessment of the service offered. Thus to help the price difference to be accepted, it is important to justify it by a clear distinction between the services offered (12, 15). On this subject, the SNCF has so many special tariffs (Escapade, Fréquence, Forfait, Grand Traveller, etc) that customers cannot always explain the price variations from one type of traveller to another. This is likely to harm the perception of fair price. If the perception of unfairness of the price is influenced by the characteristics of the yield management practice, it is also influenced by the specificities of each customer, for example the age and the customer’s sensitivity to price.

Thanks to a field study carried out in the hotel sector, we have been able to test the relationships resulting from yield management practices. We will stick to situations which disadvantage customers, in other words to scenarios which show an increase in price. This study will make it possible to observe:
- that there do exist differences in perception of unfairness between the scenarios of price variations,
- that in spite of the disadvantage for the customers, there exist scenarios which create a perception of fairness,
- that the perception of unfairness is a variable dependant on the customer profiles and characteristics of the yield management practices.

In the hotel sector, yield management generally consists in the management determining the minimum tariff which can be charged for a stay, taking into account the marginal costs generated by the production of an additional unit (9). Thus, thanks to the yield management techniques, the seller knows the minimum price to post for a room if he wishes to ensure its profitability, both in the low season as in the high season. In the Accor group, the high and midrange brands (Sofitel, Novotel and Mercure) use yield management the most, and more specifically area revenue management (2). That is why we selected a sample primarily made up of individuals staying in hotels with at least two stars (14.7% in 2*; 57.6% in 3*; 25.3% in 4* or more; see a description of the sample in the appendix).

Controlling demand by a differentiated tariff policy is a common practice in the hotel trade. Customers are accustomed to price variations according to the high, mid and low season. On the other hand, in this sector it is less usual to find differences in tariffs according to the customer’s professional activity, as opposed to rail transport for example where it is frequent. The hotel industry also differentiates its tariffs according to the date of payment, the length of stay and the time of departure. The temporal perspective is central to regulating hotel tariffs. The four scenarios tested in this empirical research will thus be based on price variations due to a temporal constraint, and involve unfavourable situations for the customer. They are thus, a priori, sources of perceived unfairness. To manage price variations, techniques exist which include time aspects and others which depend on the characteristics of the transaction (13). To avoid congestion, it is necessary to use techniques which include time aspects. The prices will vary according to dates or periods. For example the price is higher in July and August and lower from January to March. To encourage anticipation of reservations or cancellations, it is necessary to use techniques which include the characteristics of the transaction. For example the price is higher for a last minute
cancellation and lower for an anticipated reservation. The two pieces of advice and the two techniques for managing price variations lead us to suggest four sales scenarios. Scenarios 1 and 4 aim at limiting congestion during certain periods thanks to techniques based on time (over the season or for days of the week), and scenarios 2 and 3 aim at encouraging customer anticipation by using techniques based on the characteristics of the transaction (on the reservation or cancellation).

In total, 505 hotel customers of varied sex, age and socio-professional categories were questioned using a questionnaire administered face-to-face. In the hotel industry yield management mainly concerns hotels with at least 2*, therefore we gave preference to respondents who had stayed at least once in this class of hotel (see description of sample in appendix). We were careful to make sure that there was a variance of respondents regarding their usual practice of staying in hotels: the type and frequency of hotel stays, the category of hotels used, whether they had a loyalty card.

Four scenarios evaluated (disadvantageous for customers)
Scenario 1: A hotel offers different prices for the same type of room according to the season. The price of the room during the winter tends to be less expensive than during the summer period. Negative perspective: In June, the price of the room is 30% more expensive than in November.
Scenario 2: A hotel offers different prices for the same type of room according to the period of reservation. The later the reservation is made, the higher the price. Negative perspective: If you reserve your room a few days before the date of your stay, you pay a 30% surplus on the price.
Scenario 3: A hotel imposes charges for a no-show equivalent to the cost of the first night. Negative perspective: Any booking cancellation made less than 24 hours in advance involves the payment of the first night.
Scenario 4: A hotel offers different prices for the same type of room according to the days of the week. The price of the rooms is higher on Tuesdays and Saturdays. Negative perspective: On Tuesdays and Saturdays, the price of the room is 30% more expensive.

The perceived unfairness of the price caused by yield management is measured on a 5-point scale, going from Completely fair to Completely unfair. To study the role played by the customer profile we used the variables:
- socio-demographic characteristics: sex, age, PCSP
- a customer’s past experience: familiarity with the hotels, quality of the hotels used, loyalty card holder
- the customer’s emotions: category of stay (work/leisure)

To study the role of the characteristics of yield practices (Explanation, Equity, Distinction of the service offered) we asked the customers to give the reasons for their choice of score on the unfairness scale (whether they have a perception of fairness or unfairness). Measurement of the customer’s behavior in the event of perceived unfairness
Lastly, we added a question about the reaction of the customer in the event of perception of unfairness: How do you behave? (Complain to the management, disinterest in the hotel, stop choosing this hotel, other).

4. Results and analyzes
The results show that scenarios 2, 3 and 4 are on average regarded as unfair, whereas scenario 1 is on average perceived as fair (table 1). In order to mitigate the constraints of normality which are difficult to respect using a 5-point scale, we used nonparametric tests to study the significance of the differences in answer between the four scenarios. The tests of Kruskal Wallis and Mann-Whitney show that the mean differences are significant for all the possible combinations of scenarios (tests significant at 1%).

------------- Table 1: Level of unfairness perceived in the 4 scenarios (5-point scale, N = 505) ------------

In spite of the price variations which disadvantage the customers, scenario 1, on average, is not regarded as unfair. In this scenario, the price variations are due to a structural reason which is apparently accepted by the majority of the respondents. The strong demand during the summer holidays seems to be enough to justify the increase in price. Thus, in spite of the financial loss, the possibility of finding a reservation in a hotel despite the fact it is peak season can be perceived as a return benefit which the customer considers fair.

On the other hand, a last minute reservation (scenario 2), a last minute cancellation (scenario 3) and a stay on certain days of the week rather than on other days (scenario 4) are not regarded as sufficient reasons to justify a price increase. The unfairness of last minute reservation (scenario 2) can be explained by the increasing use of Internet to make hotel reservations which has modified purchasing behavior. This modified purchasing behavior when booking holidays has developed rapidly over recent years because of the multiplication of on line transactions and the current economic crisis. Similarly, the fact of reserving a room and having to pay the first night if
it is not cancelled at least 24 hours in advance (scenario 3) is regarded as unfair by customers. The latter give less importance to the hotel manager having to find a customer at the last minute, than to their own disappointment at having to pay for a service which they did not consume. The feeling of unfairness with respect to scenario 4 comes from the impression that the hotel benefits from higher numbers on certain days to increase its tariffs without the customer benefiting in return. Feeling wronged in the exchange relationship, the customer regards this practice as unfair. Customers are not aware that in general hotels seek to use this method to spread demand rather than to increase their profits. In most cases, the will is not to penalize the customers, but to favour a better distribution of the demand for the service over a given period.

We can thus conclude that the increase in price explained by a cause independent of the will of the hotel and experienced by the whole of the hotel sector (structural causes such as mass holiday departures during the summer period) will tend to be accepted by the customers. On the other hand, the increases in price practiced when the hotel still has the possibility of not being penalized (following a last minute reservation or cancellation) are perceived as unfair because they benefit the hotel owner most. Similarly, it appears that an isolated practice by hotel owners or a small number of hotel owners (such as a rise in prices on Tuesdays and Saturdays) is seen as unfair in the eyes of the customers. As a result the feeling of fairness exists only if the customer is assured that the hotel owner acts without benefiting from the situation to make more profit that usual; unless the profits make it possible for the firm to adjust itself to the competition or provides the customer with a fair benefit in return. These conclusions can be supported by the theory. Equity theory (1) highlights that the additional cost invested by the customer must be accompanied by an advantage considered as equivalent (for example, for scenario 1, the customer can benefit from a hotel room even though it is peak season). This is not the case for scenarios 2, 3 and 4. In these three scenarios the hotel seems to benefit from the situation to increase its profits, without any reason linked to competition and without any benefits for the customer in return. These results confirm the work of Kimes and Wirts (13) which stipulates that a transaction which only varies in terms of price is highly likely to be regarded as unfair. This perceived unfairness comes from the fact that the firm is solely aiming, in the eyes of the customers, to increase its own profits (5).

To study the influence of customer profiles on the perception of unfairness with respect to the four scenarios, we also carried out nonparametric tests. The results are summarized in table 2.

The analyzes show that each of the four variables chosen to define customer profile has an influence on the perception of unfairness. They also show that there exist nuances according to the scenario and the measurement used for the profile variable. Concerning the socio-professional category, it appears that depending on the customer’s profession, the scores of unfairness are significantly variable. On average, top executives, middle management and freelancers find 2, 3 and 4 fairer than other customers. In parallel, one notices that for the 4 scenarios, the quality of the hotels used and the sensitivity to price have an influence on the perception of unfairness: customers staying in the top-of-the-range hotels and not doing any research in particular on the prices of reservations, judge the scenarios as less unfair than other customers. These results seem to show that the scenarios are less unfair for customers with higher than average purchasing power and who study less the reservation prices.

Concerning sensitivity to the price variations, one notices that there exist differences in the level of unfairness perceived for scenarios 1 and 4. Being used to price variations for the same room unrelated to high or low season reinforces the feeling of unfairness with respect to scenarios 1 and 4. Thus the knowledge of the practices of yield management goes even as far as reversing the trend however positive with respect to scenario 1. However, scenarios 2 and 3 are perceived indifferently according to how used the customers are to price variations. Consequently, knowledge of the existence of yield practices motivated by other causes that seasonal causes, creates a perception of unfairness of price variations for seasonal reasons (as is the case for scenario 1).

With respect to the emotional dimension, the results show a difference in the level of perceived unfairness for scenarios 1, 2 and 4 between customers travelling for work and customers travelling for leisure. Moreover, these three scenarios are perceived differently according to the level of familiarity of staying in hotels. More precisely, customers travelling for work and who regularly stay in hotels perceive the three scenarios as less unfair than other customers. On the other hand, whatever their emotional profile and familiarity profile, customers judge as unfair having to pay for a night when cancellation is carried out less than 24 hours in advance (scenario 3). Consequently, apart from paying for a night in the event of late cancellation, the negative scenarios are less unfair for business customers or those who stay in hotels regularly, than for other customers. This result seems coherent insofar as business customers

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**Table 2: Influence of the customer profiles on the perception of unfairness**
are generally the customers whose hotel frequenceation is highest.
Lastly, for the four scenarios having a hotel loyalty card is a discriminating factor. Loyal customers expect special treatment and consider the price differences more unfair, even when they may appear justified (as for scenario 1).
All these results show that the hotels should focus their efforts on those customers who have the most difficulty in perceiving the fairness of a price increase. The customers who are the most difficult to convince can be separated into three categories: budget tourists, loyal customers and the well-informed. Nevertheless, the cost of these efforts should not be higher than the benefits gained from a fairer perception of yield management practices by the customers. Consequently, the privileged target could be that of “loyal customers” more especially as loyalty programmes provide a tool which can be used to avoid or to reduce customer conflict thanks to the attribution of gifts or price reductions.

To analyze the role of the characteristics of yield management practices on the perception of unfairness, we focus on scenario 4, which, on average, is perceived most negatively. Here, we asked the customers directly the reasons for their choice of response on the scale of unfairness. The reasons customers give to justify their chosen level of perceived unfairness conform to the three characteristics of yield management practices: the explanation, the equity of costs and benefits, and the distinction of the service offered.

The importance of the explanation in yield management practice is mentioned by the 43 customers specifying that the unfairness rises from a lack of information. Among the customers perceiving the practice as unfair, 22.5% stipulate that the unfairness is due to the fact that more explanation on price variations is needed. On the other hand, customers perceiving the practice as fair, can give explanations for the price variations: according to them, it is due to action from competitors (30.7% of the customers perceiving the practice as fair), to the fact that it is a current practice in the sector (23%), or to the hotel services (9.3%).
The perception of equity is also essential for the customers. We have just seen that the perception of fairness can be explained by the characteristics of the hotel (characteristics which are of more interest to the customers in the event of higher prices). Similarly, 35.9% of the customers judging the price variation as fair explain their answer by the fact of being able to benefit from better prices for other services. On the contrary, nearly 30% of the customers who perceive unfairness explain their response by a lack of respect towards them. The customers feel hurt since they must pay a higher bill, without being able to reap any additional benefit from it. This data confirms the importance for hotels when increasing prices to highlight any benefits the customer receives in return.

Then the distinction of the services offered is seen as an important source of perceived fairness. An increase in price can be justified by the characteristics of the hotel (9.3% of customers regard the price as fair), just as an unfair price can be the consequence of a lack of differentiation of the services offered. Nearly 40% of the customers perceiving unfairness state that it is due to the absence of any reason justifying the price difference and 8.9% of them think that the prices given for each service are not respected.
Consequently, if the customer profile has an important influence on the perception of unfairness with respect to the price, the characteristics of yield management practice implemented by the hotel sector also have a paramount role.

Among the 191 customers perceiving unfairness and having justified their answer, it is clear that a high proportion (40.8%) will not choose the hotel in the future. Even if the result is only of declaratory nature, it proves how the perception of unfairness can have serious consequences for hotel professionals. This declaration of behavior is all the more serious as management and employees of the hotel will not necessarily be aware of it. Only 12% of the customers think they would complain to the management, and 8.9% to the receptionist. It will be impossible for the hotel to be aware of this customer dissatisfaction, and consequently, to take measures to repair the damage done.

5. Conclusion

Thanks to our research, we have been able to show that it is possible to practice price variations which are disadvantageous for the customers, but which are still perceived as fair. The feeling of fairness exists when the customer thinks that the hotel does not seek to increase its profits, except if it is to align itself with competitors, or if these profits also benefit the customer fairly. The results underline the fact that for some yield management practices, it is a priori difficult even impossible to make them fair in the eyes of the customers. In our study, whatever the customer profile studied, payment for a night in the event of a last minute cancellation (less than 24 hours in advance), is systematically regarded as unfair. Nevertheless, the analysis of the effects of the characteristics of yield management practices shows that there exist solutions to reduce the perception of unfairness. Finally, the risk of YM practices is not negligible since it can lead a high number of customers no longer choosing the hotel, without giving the hotel the chance to repair the damage.

References


Appendix

Table 1: Level of unfairness perceived in the 4 scenarios (5-point scale, N = 505)

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scenario 1</td>
<td>2.43</td>
<td>1.069</td>
</tr>
<tr>
<td>Scenario 2</td>
<td>3.79</td>
<td>1.094</td>
</tr>
<tr>
<td>Scenario 3</td>
<td>3.24</td>
<td>1.176</td>
</tr>
<tr>
<td>Scenario 4</td>
<td>3.91</td>
<td>0.852</td>
</tr>
</tbody>
</table>

Tableau 4: Influence of the customer profiles on the perception of unfairness

<table>
<thead>
<tr>
<th>Socio-professional category</th>
<th>Scénario 1</th>
<th>Scénario 2</th>
<th>Scénario 3</th>
<th>Scénario 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profession</td>
<td>Non sig.</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Experience</td>
<td></td>
<td>**</td>
<td>**</td>
<td>Non sig.</td>
</tr>
<tr>
<td>Familiarity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hotel quality_nb of stars</td>
<td>**</td>
<td>*</td>
<td>*</td>
<td>**</td>
</tr>
<tr>
<td>Loyalty</td>
<td>**</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Affect</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work/Leasure</td>
<td>*</td>
<td>*</td>
<td>Non sig.</td>
<td>*</td>
</tr>
<tr>
<td>Price sensitivity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Price researches</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>**</td>
</tr>
<tr>
<td>Price changes</td>
<td>*</td>
<td>Non sig.</td>
<td>Non sig.</td>
<td>*</td>
</tr>
</tbody>
</table>

KW: Kruskal Wallis test  
MW: Mann-Whitney test  
*: Significance at 1%  
**: Significance at 5%