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Yield management in the lodging industry: empirical examination of current implementation and recommendations based on a proposed model

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1. INTRODUCTION

The objective of this project is to propose a yield management implementation model for the lodging industry that can be followed by hotels with the aim of improving their yield management implementation systems. In order to reach this objective we have analyzed yield management literature, previous models based in other authors' research and carried out a field research in order to gather empirical data.

Yield management, also known as revenue management, consists in the application of information systems and pricing strategies in order to sell the right room, at the right price, to the right client, at the right moment and through the right distribution channel in order to maximize revenue per available room (Kimes, 1989).

According to our preliminary empirical examination, findings suggest that analyzed hotels are not yet taking full benefits offered by yield management implementation. Consequently, the proposed yield management implementation model can be used as a guide in order to effectively overcome current deficiencies.

The project encompasses a theoretical part, which includes a theoretical background in order to exemplify the lodging industry characteristics that make necessary the application of yield management practices with the aim of maximizing revenues over a fixed perishable inventory, an overview of the most important yield management analysis methods and the yield management implementation model based on yield management literature and other authors' research that we propose.

In the empirical section, a research is conducted in order to obtain an empirical approach of the current yield management implementation level in hotels. The sample selected were the hotels belonging to the Hotel Association of Andratx and the hotels belonging to the Hotel Association of Cala Ratjada. The investigation was carried out through two different methodologies. On the one hand, an online questionnaire was designed and sent to all the hotels of both associations. On the other hand, two personal interviews were carried out with two different hotel executives belonging to each of the mentioned Hotel

Associations in order to obtain a deeper insight and understanding of the yield management implementation level at the hotels.

Finally, in the last section the ending conclusions of the project are presented discussing the results of the empirical analysis and proposing recommendations based on the proposed yield management implementation model and reviewed literature. Furthermore, implications, limitations and future research are discussed.

2. THEORETICAL BACKGROUND

2.1. Nature of the problem

Since the lodging industry belongs to the services industry it posses some attributes that clearly influence its management practices (Bowen, 2002). There are five main features that differentiate the service industry as opposed to the manufacturing industry. These characteristics are presented in Figure 1.

Figure 1- Service attributes
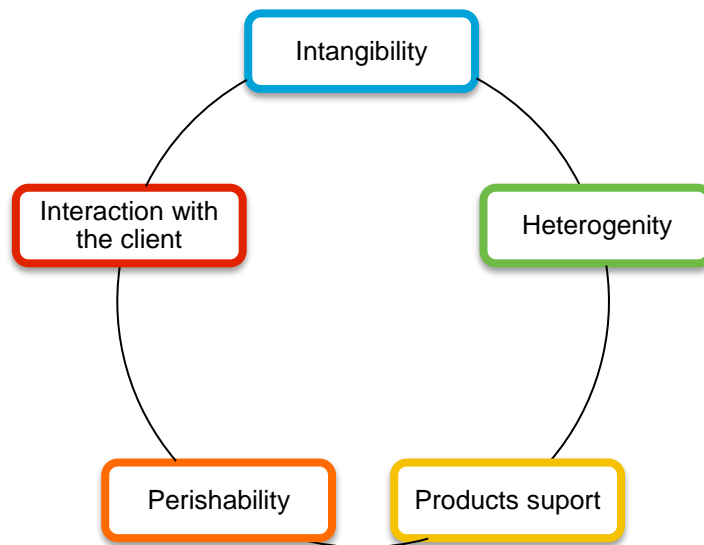
Source: Chase et al., 2009

The sale of a room to a client is clearly defined with these characteristics. Firstly, when providing overnight accommodation, there is a process of interaction with the client. Check-in, check-out and the assistance to any client's request are examples of the mentioned interaction. Secondly, an overnight is an experience, an intangible process without physical dimensions that can be measured. Service dimensions cannot be tested before actual consumption. Thirdly, since the service implies some degree of interaction with the client and intangibility, it is heterogeneous. For example, even that it is trying to be standardized through techniques such as service scripting (Johnston and Clark, 2008), the service received depends on the likeability and professionalism that human resources inspire at a certain point of time. Fourthly, the lodging activity integrates tangible products. The client is offered a package of features including supporting area, goods that facilitate the overnight, explicit services

and implicit services. Fifthly, an overnight is perishable. This means that it integrates a temporal element that implies the no possibility to storage inventory, becoming thus time dependent. The hotel has a fixed capacity, so to speak of 80 rooms, and if these rooms are not sold for the 11th of March, those cannot be carried over in inventory and be sold the 12th of March (Chase et al., 2009). This last characteristic is a crucial element that needs to be understood when managing lodging operations and specially when applying yield management inasmuch as this revolves around perishability and fixed capacity.

2.2. A deeper understanding of perishability and fixed capacity effect

As indicated in the pervious section, the lodging industry, as other service industries, presents an entire perishable offer. This, plus hotel's fixed capacity are the basis that give rise to the necessity of managing hotel rooms sales with the specific management tool, called yield management, that is going to be the topic of this project. But first, in this section an analysis of perishability and fixed capacity effect will be conducted.

Fixed capacity effect implies that hotels are not able to modify their rooms inventory according to demand fluctuations in the short run because there is a fixed amount of units of capacity for sale, which is the total number of available rooms. Capacity is only adjustable in the long term requiring high capital investment. Fixed capacity is analyzed in figure 2.

Figure 2- Hotel's fixed supply
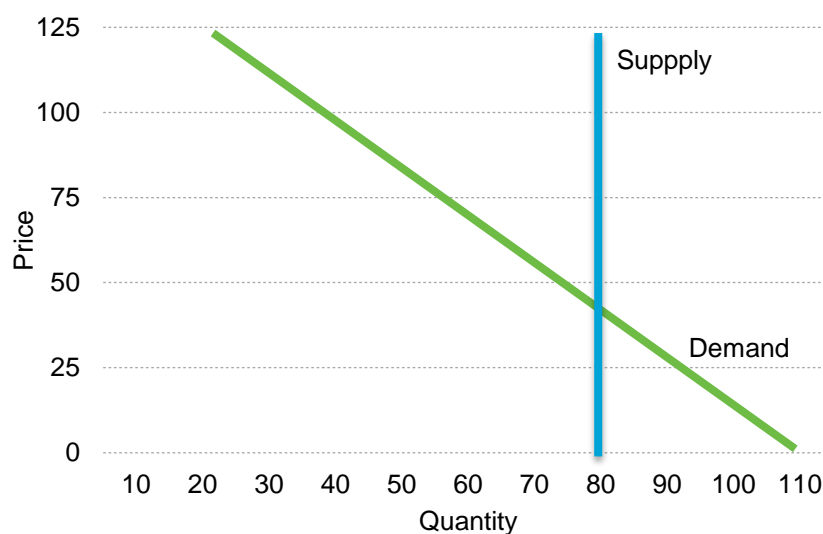
Source: own elaboration

As presented in the graph above, the supply of a particular hotel is inelastic. On the one hand, rooms are limited resources because no more than the existing ones can be offered to clients. On the other hand, in reference to perishability, these rooms are available to be consumed at a certain and limited point of time, after which, these units of capacity are lost forever and can not be recovered carrying them over inventory. Then, it is not possible to smooth demand variation through inventory storage.

Hotel's aim is to sell all the perishable units of capacity that it offers per night at the maximum possible rate in order to maximize income revenue. The ideal scenario from hotelier's point of view would be to be able to sell the whole room's fixed inventory at the rack rate, which is the highest price of a room without any discount (Hayes, Ninemeier and Miller, 2014). Nevertheless, the case when the demand of rack rates is higher or equal to supply is not the common scenario since demand fluctuates generating peaks and valleys, as indicated in figure 3, provoking revenue losses for the hotel.

Figure 3- Demand fluctuations
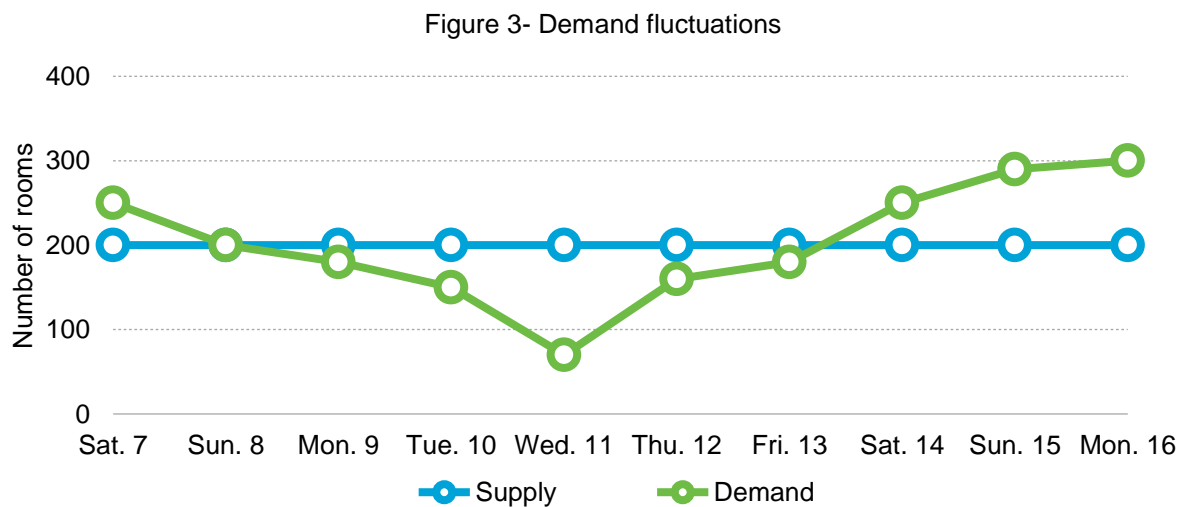
Source: own elaboration

On the one hand, when demand is higher than supply, even though we could assume that the hotel is maximizing revenues because is selling out, it may not be like this because it could have sold some rooms at a higher rate that could have incremented revenues.

On the other hand, when demand is lower than supply, the hotel is clearly facing an even more pernicious scenario because it is not able to sell the whole rooms inventory maintaining unsold units of capacity generating zero revenue.

So that to speak, an empty room constitutes an opportunity cost (Kimes, 1989). Furthermore, hotels are characterized by high fixed costs and relative low variable costs. Therefore, the costs that remain constant independently of the number of rooms sold are relatively higher than the costs that depend on the number of rooms occupied. The reason of this cost structure is that hotels are characterized by high infrastructure costs that imply scale economies to appear causing low marginal costs.

Against this background, the offering of differentiated rates according to demand's forecast, which is an example of yield management tactics, constitutes a solution to address both problems; perishability and high fixed costs. Then, when the hotel faces low demand, it will offer promotions selling rooms at lower rates in order to boost demand increasing occupancy, whereas when the hotel faces high demand, it will offer some rooms at higher rates in order to maximize revenue (Chávez-Miranda, 2005).

2.3. The need of segmentation

In order to sell the whole rooms inventory at different rates maximizing revenue, clients' segmentation needs to apply (Cross, 1997). As introduced in the section above, yield management consists in selling perishable units of capacity to a fluctuating demand with peaks and valleys. In order to match supply with demand as best as possible, the hotel needs to target complementary segments that allow the hotel to capture higher rates when demand is abundant and to maximize occupancy when demand is scarce. Indeed, as indicated by Kimes (1989), the larger the number of segments, the higher the yield management benefits obtained.

Markets are composed by buyers who have different needs, wants, resources, locations, buying attitudes and buying practices. Actually, since each buyer has unique needs and wants, the hotel could ideally design a separate marketing program for each buyer. Nevertheless, in the current environment it is not possible (Kotler, Bowen and Makens, 2006). In spite of that, hotels can segment the market in several groups that share similarities among them and differences among others.

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Whereas market segmentation strategy can be based in several criteria, yield management segmentation strategy is based on behavioral differences, and more specifically, on price elasticity (Netessine and Shumsky, 2002). As indicated by Weatherford and Bodily (1992), the common mechanism used to segment customers in yield management is the time of purchase. Elastic consumers are more price sensitive and tend to make their reservations far in advance. They are willing to renounce some flexibility in order to purchase at a lower rate. Inelastic consumers demand flexibility and tend to wait until last minute to make their reservations. Since these costumers do not vary consumption according to price, they are less-price sensitive, the hotel can sell to them at a higher rate. The demand curves of these two segments are analyzed below in figure 4 and figure 5.

Figure 4- Elastic demand   Figure 5- Inelastic demand
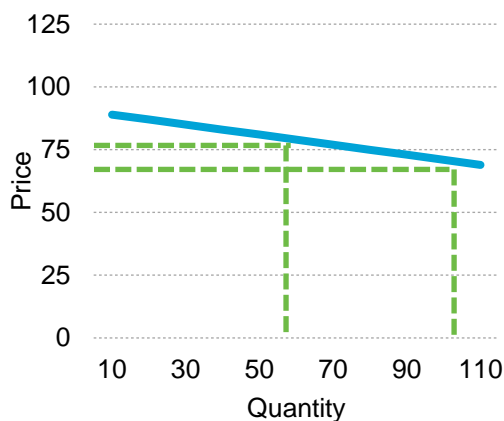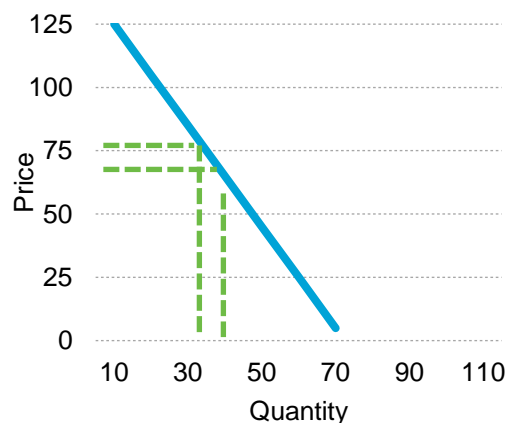
Source: own elaboration   *Source: own elaboration*

Figure 4 makes reference to an elastic demand curve whereas figure 5 makes reference to an inelastic demand curve. Each segment matches with different demand curves and that is to say each segment presents different price elasticity or price sensitiveness (Netessine and Shumsky, 2002). Not all the costumers are willing to pay the same price for a room and not all the costumers react the same way in front of price alterations. As shown in figure 4, an elastic consumer modifies significantly consumption when prices change. That is, presents price sensitiveness altering the consumption according to prices. Whereas that, as presented in figure 5, an inelastic consumer does not

modify consumption according to price changes consuming a similar amount of quantity regardless of the price set.

The identification of the segments that present a higher sensitiveness and lower sensitiveness in front of price's alterations needs to be done by the hotel in order to apply correctly yield management practices. Then, through demand segmentation, the hotel is able to sell at different prices according to customer's price elasticity and consequently the hotel is able to maximize incomes over a fixed perishable inventory with demand fluctuations. A detailed analysis of the economic benefits achieved through segmentation is presented below.

Figure 6- Single price	Figure 7- Multiple prices
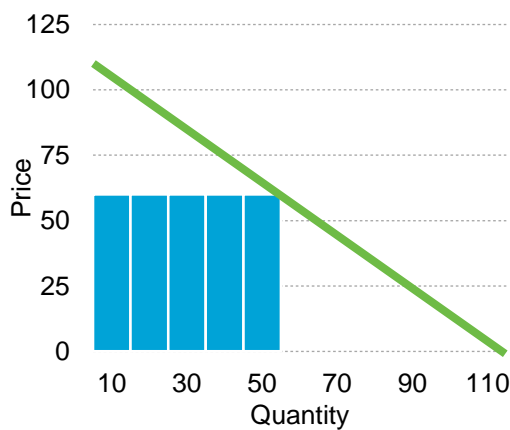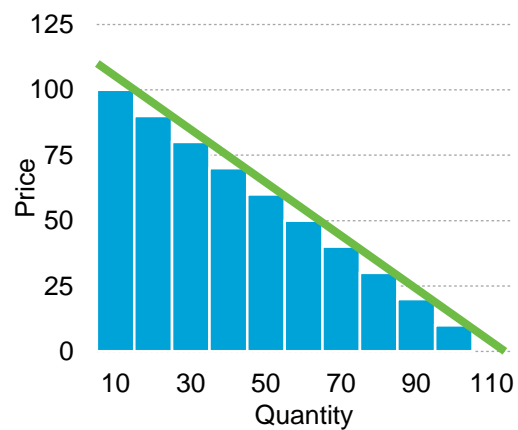
Source: own elaboration Source: own elaboration

First of all it is necessary to mention that the analysis presented above in figures 6 and 7 supposes a simplification of real complexity. Nevertheless, it clearly proves through micro economic theory that the application of different rates for different costumer segments is profitable for the hotel in order to maximize total revenue.

Figure 6 represents the revenue obtained by a hotel that sells the whole inventory at the same rate, which in the example is 60€. Then, for a particular day, a rate of 60€ only attracts 50 clients and the remaining 60 rooms remain unsold. Nevertheless, some of the ones who purchase at the rate 60€, were willing to pay a higher rate. Thus, applying only one rate, the hotel is not earning neither the consumer surplus of some of the purchasers nor the lower rate that other consumers would have been willing to pay for the unsold rooms, which in this example generate 0 revenue.

Figure 7 represents the revenue obtained by a hotel that applies yield management selling its inventory at different rates. In this case, the hotel is maximizing revenue because is earning almost the maximum price that each different costumer is willing to pay. It is necessary to point out that to set rates according to the specific willingness to pay of each segment in order to retain the whole consumer surplus is neither realistic nor possible. Nevertheless, through the establishment of several rates for different segments, hotels can maximize to a large extent their revenue (Serra-Cantallops, 2011).

A requirement in order to apply successfully different rates to different segments is the establishment of barriers or fences between each segment (Kotler, Bowen and Makens, 2006). Even that one costumer may have a higher willingness to pay, if he or she founds a cheaper rate, will purchase this one maximizing thus its own consumer surplus (Krugman, Wells and Olney, 2007). Even that as pointed out previously, generally the purchase of elastic consumers and inelastic consumers does not coincide at the same time, and then the moment of purchase becomes the segmentation factor (Weatherford and Bodily, 1992), fences that restrict inelastic consumers to purchase lower rates need to be established. Each rate must be accompanied with the proper purchase restrictions that match with segment's characterization. A typical fence that hotels apply for discounted rates are no reimbursement or the no possibility to change in order to avoid that inelastic consumers that require flexibility do not purchase at this rate and purchase a higher rate with a refundable policy that matches their needs and requirements.

2.4. Forecasting

Now that the problem of perishability and fixed capacity has been explained and the benefits of targeting different segments with different price sensitivity in order to maximize revenue per available room with an uncertain fluctuating demand has been understood, it is important to take a look at forecasting since it is the is the key in order to apply yield management practices (Talluri and Van Ryzin, 2004).

The key problem in yield management is that the demand of hotel rooms fluctuates through peaks and valleys and the hotel presents a fixed capacity

and perishable inventory and needs to apply yield management techniques in order to maximize the revenues per available room. This situation has been previously exemplified in figure 3, demand fluctuation.

Even that the daily demand for hotel rooms is uncertain and dependent on uncontrollable events, hotels can implement forecasting techniques in order to predict which will be the demand and consumers behavior at any point in time. Critical inputs in order to predict future demand levels are historical demand, predictable events, special events and occasional changes in customer's preferences (Netessine and Shumsky, 2002).

As pointed out previously, when the hotel forecasts that demand will exceed supply, thus utilizing the whole perishable fixed capacity, the hotel will sell all its rooms at the highest rate, called rack rate to the inelastic segments. Nevertheless, when the hotel forecasts that demand will be lower than supply, discounted rates need to be opened in order to foster the purchase of elastic consumers and in consequence maximize revenues over the fixed perishable inventory of rooms (Chávez-Miranda, 2005).

2.5. Towards a definition

After having analyzed all the issues mentioned above, yield management can be defined as a continuous decision making process that allows hotels to sell the right room, to the right costumer, at the right time, for the right price and through the right distribution channel in order to maximize both occupancy and revenue (Kimes, 1989). The key performance indicator that combines these two measurements is revenue per available room (Donaghy, McMahon and McDowell, 1995).

Yield management is a revenue maximization tool that combines both inventory control together with pricing. On the one hand, it forecasts the demand according to past, present and future information. On the other hand, it manages room's inventory through rate booking limits in order to match supply and demand optimizing revenues as best as possible. In other words, yield management manages different rates depending on segments' demand. It consists in determining how many rooms should be sold at each rate according

to forecasted demand levels in order to maximize total revenue from a perishable fixed inventory (Serra-Cantallops, 2011).

3. YIELD MANAGEMENT ANALYSIS METHODS

As indicated by Kimes (1989), some of the most important yield management solution methods fall into three different categories. These categories are threshold curve, mathematical programing and economics-based.

3.1. Threshold curve method

Threshold curve method operates through the following procedure. First, data on past booking behavior over time are collected. Then, curves based on historical aggregate demand patterns are constructed. According to expected potential fluctuations, a range of variation is plotted in the graph. Figure 8 represents an example of a threshold curve graph.

Figure 8- Threshold curve method

Days before arrival
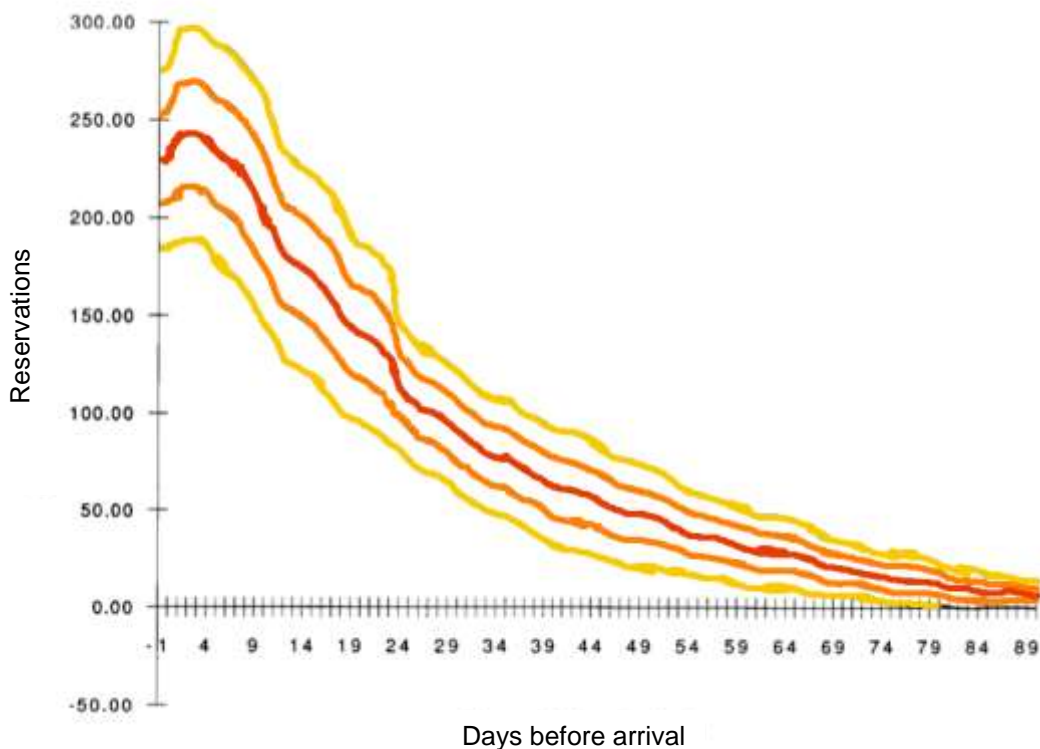
Source: Kimes, 1989

Finally, actual booking patterns are plotted against the forecast. If actual bookings are below the threshold values or expected demand patterns, the hotel should open discount rates in order to encourage more reservations from price sensitive customers. Inversely, if actual bookings are above the threshold

values, the hotel should eliminate discounts, selling thus at higher prices (Relihan, 1989).

3.2. Mathematical programing

Mathematical programing approach is based in optimizing through mathematical techniques an objective function in order to allocate scarce resources in the most efficient manner given certain restrictions and the competition in the use of the resources. This method can be applied in the decision process of the yield management area in order to maximize yield per available room, given a fixed capacity.

Mathematical programing includes linear programming, version where it is supposed that the revenue and demand functions are linear; dynamic programming approaches, version used in situations where the function needs to be optimized along a period of time; probabilistic linear programming and network approaches (Kimes, 1989).

Given the capacity restriction, thus not being possible for the hotel to enlarge the maximum number of rooms in the short run, it is needed to assign the hotel rooms to the most appealing costumer in terms of revenue. This can be optimized through linear programming if supposed that the productive factors are used and consumed in a linear and homogeneous manner (Chase et al., 2009). This means that the potential revenue that the hotel can earn from a room is the same for all the rooms of the same type.

In yield management area, mathematical programing approaches maximize summation of each room per its type of rate under the assumptions of not selling more than total capacity and not selling for each different segment more than the expected demanded quantities. Once the revenue and demand functions are approximated to a mathematic linear function, it is possible to maximize the yield given the potential demand using optimization software, for instance Solver in Microsoft Excel.

3.3. Economics-based

In this section, an example of the yield management problem will be exemplified and solved through the expected marginal revenue method, which

belongs to the economics-based approaches, in order to describe how to maximize expected revenue. The expected marginal revenue model was developed by Peter Belobaba in order to incorporate probabilistic demand into inventory control for distinct rates. Belobaba's model was developed for being applied in the airline industry. However, several authors such as for example Netessine and Shumsky (2002), applied this method at the lodging industry.

Imagine that a hotel features 70 double rooms that can be occupied indiscriminately by two different segments. We will suppose that those two segments present different demand curves. One segment will be leisure travellers and the other one, business travellers. We will also suppose that travellers pay per room, indiscriminately if one or two persons are occupying the room. The main features that characterize these two segments are listed in figure 9.

Figure 9- Business and leisure travellers characteristics
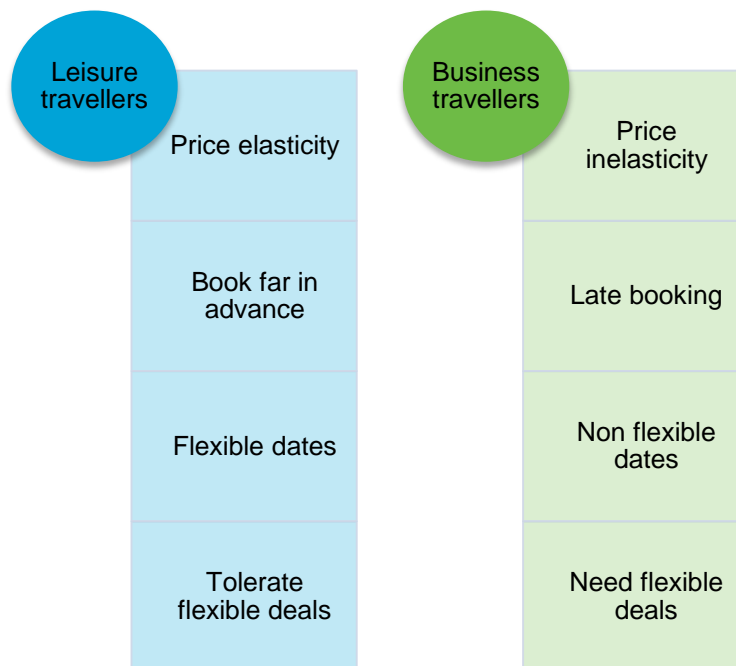
Source: Serra-Cantallops, 2011

As indicated in figure 9, leisure travellers are price elastic consumers that are sensible to changes in prices. The lower the prices, the more they buy, whereas the higher the price, the less they buy. Furthermore, they have some specific characterizations that differentiate them among business travellers. For

example they usually book far in advance, have flexible dates and tolerate non flexible deals.

Business travellers are non sensible to changes in prices because they need the room as a necessity. For example they have to attend a business meeting and they can not miss it. They usually book late and their dates are non flexible but need a flexible arrangement such as a refundable policy in case the meeting is cancelled and consequently they do not require the hotel's room.

Figure 10 represents the typical pattern described above where leisure travellers book far in advance whereas business travellers tend to book close to the day of travel.

Figure 10- Typical leisure and business travellers booking patterns
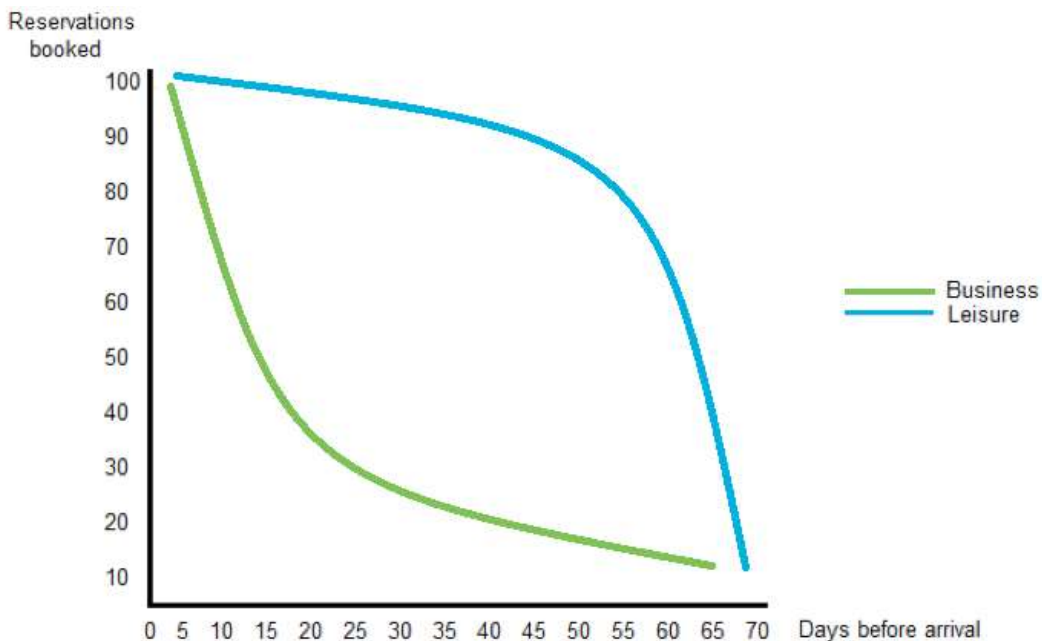
Source: Relihan, 1989

In this example, we will suppose that the hotel has determined two different rates. One is called rack rate, which is targeted for business travellers and the other one is called discounted rate, which is targeted for leisure travellers. Let's suppose that the rack rate is 120€, whereas the discounted rate is 70€.

Obviously, the hotel in its aim to maximize revenue, would prefer to sell the maximum possible number of rooms to business travellers at rack rate. Nevertheless, the demand of this rate will not be equal to the fixed perishable offer. Then, the hotel needs a method in order to optimize the number of rooms

allocated for business travellers and the number of rooms allocated for leisure travellers. So to speak, how many rooms should be offered to the leisure segment at the discounted price since in our example only two different rates are being considered.

It is important to remember that if the hotel protects too many rooms for the business segment, it has the possibility to earn a higher rate but it takes the risk of having rooms non occupied and thus generating 0 revenue. Then, the hotel needs to find out the optimal number of rooms that it should protect at rack rate till the point at which the expected revenue of adding one room to the protection level is equal to the revenue achieved by selling the rooms to a leisure costumer at the discounted rate (Kimes, 1989).

Let's suppose that the hotel has registered historical data regarding the demand of business travellers. Then, thanks to this data, the hotel knows the quantity of rooms that were sold to this segment throughout the period T. In order to optimize the solution, it is convenient that historical data belong to a particular type of season since demand fluctuates greatly among them due to seasonality. In our example we are going to suppose that historical data belongs to 90 days of midseason. Thanks to this data, we are able to calculate the probabilities of selling Q quantity within all the possible quantities and the accumulated probability of selling the Q quantity or a greater one on a single midseason day at the rack rate. The table below in figure 11 represents all this information.

Figure 11- Historical demand data of rooms at rack rate

Demand for rooms at rack rate (Q)	Number of days with this demand	Probability of this quantity	Cumulative probability μ	1- μ
less than 15	19	21%	21%	79%
15	2	2%	23%	77%
16	3	3%	27%	73%
17	1	1%	28%	72%
18	3	3%	31%	69%
19	2	2%	33%	67%
20	2	2%	36%	64%
21	3	3%	39%	61%
22	3	3%	42%	58%

23	4	4%	47%	53%
24	5	6%	52%	48%
25	6	7%	59%	41%
26	5	6%	64%	36%
27	4	4%	69%	31%
28	4	4%	73%	27%
29	3	3%	77%	23%
30	4	4%	81%	19%
more than 30	17	19%	100%	0%

Source: own elaboration

Now, given a determined level of rooms Q protected from leisure segment in order to be sold at rack rate for the business segment, should the hotel increment the level of protected rooms at Q+1?

The answer is that the hotel should increment the number of rooms protected for the business segment till the point when the expected revenue is higher than the revenue that would be achieved if this room would be sold to the leisure segment at a discounted price.

If we describe 1-µ (cumulative probability) as the probability that the additional room that the hotel decides to protect for the business client will be indeed booked by the business client, thus earning the rack rate, and we describe µ as the probability of not selling the room to the business client at the rack rate after the room has been protected for this segment and in consequence not earning neither one nor the other rate. We can conclude that with a probability of (1- µ) the hotel will earn rack rate, and with a probability of µ the hotel will earn nothing. By this way, protecting the room for the business segment means that the hotel is taking the risk of losing the potential earning that the leisure segment would have provided if the room would have not been protected, being this his opportunity cost, and that this will happen with a probability of µ.

It is important to notice that µ is not linear since µ depends on the number of rooms to be considered. For example, if only one room has been allocated to the business segment, it is almost sure that this room will be purchased by this segment (1-µ) ≈100%. Nevertheless, if 69 rooms have been allocated to the mentioned segment, the probability of purchasing the last room will be lower,

(1-μ) ≈1%. It must be said that this will depend on the hotel and that the example cited is only an approximation that has been described in order to exemplify that the probability of selling an additional room to a business client will be lower the higher number of rooms protected for this segment.

As indicated before, we assume that the rack rate is 120€ whereas the discounted rate is 70€ and we suppose that any room that will not be allocated for the business segment will be purchased by the leisure segment at the discounted rate. Then, the hotel will decide that is convenient to allocate an additional room to the business segment always that;

$(1- μ)*120 ≥ 70$

Now, if we isolate μ;

$120 -120μ ≥ 70$

$120-70 ≥120μ$

$μ ≤ 50/120$

$μ ≤ 0,416$

Then, according to historical data the hotel can forecast that it will be convenient to allocate rooms to the business segment at the rack rate always that $μ ≤ 0,416$. Which is the same that saying that it will be convenient not to allocate rooms for the business client always that the expected revenue of allocating the room for the business client will be lower than selling the room to the leisure client.

$(1- μ)*120 ≤ 70$

Now, if we isolate μ;

$120 -120μ ≤ 70$

$120 – 70 ≤ 120μ$

$μ ≥ 50/120$

$μ ≥ 0,416$

Now, in order to determine the optimal level of rooms that should be allocated to the business segment, the hotel has to check the accumulated

probability distribution and search the lower Q value that belongs to an accumulated probability higher than 0,416.

In our example, if we look at the table presented in figure 11, we find that this happens in Q=22, which has a cumulative probability of 42%. Being thus 22 the optimal number of rooms that should be allocated for the business segment.

As indicated by Netessine and Shumsky (2002) other alternatives exist in order to find the optimal solution through the marginal expected revenue method. A possible alternative could be applied through business demand distribution. Indeed, if we suppose that demand's distribution follows a normal distribution, simply through the mean and the standard deviation, we would be able to describe business demand's patterns and optimize the number of rooms allocated to the business segment.

In order to exemplify this solution, we will suppose that the hotel only knows that demand follows a normal distribution, that the mean is 22,5 and the standard deviation is 4,93. Note that this mean and standard deviation have been calculated over the historical demand table in order to find the same optimal Q, even that the mentioned distribution may not follow a normal distribution. However, we have decided to use these numbers in order to prove that with this method the optimal solution reached is the same (Newbold, Carlson and Thorne, 2013).

Remember that in our example business travellers pay 120€ and leisure travellers 70€, and in consequence F(Q) or accumulated probability is 0,416. Then, introducing probability, mean and standard deviation into Excel's Norminv function, or any other software, we obtain 21,45 as a result. Being thus also 22 the optimal number of rooms that should be allocated for the business segment.

4. YIELD MANAGEMENT IMPLEMENTATION MODEL

After explaining the reasons why yield management is an extremely important strategic management tool for firms with perishable inventory and having presented an overview of some of the most important yield management analysis methods, in this section a yield management implementation model will be proposed for hotels in order to maximize capacity utilization obtaining thus revenue maximization.

In this project an implementation model is defined as the steps and procedures that should be followed in order to implement an effective yield management system at a particular hotel. Different yield management models can be implemented in order to maximize revenue. Indeed, any hotel can implement its own model. In academic research, several authors have proposed different implementation models. Since all of them share a common ground, in this project an own sequential model based on others authors' research is proposed. This yield management implementation model is presented in figure 12.

Figure 12- Proposed yield management implementation model
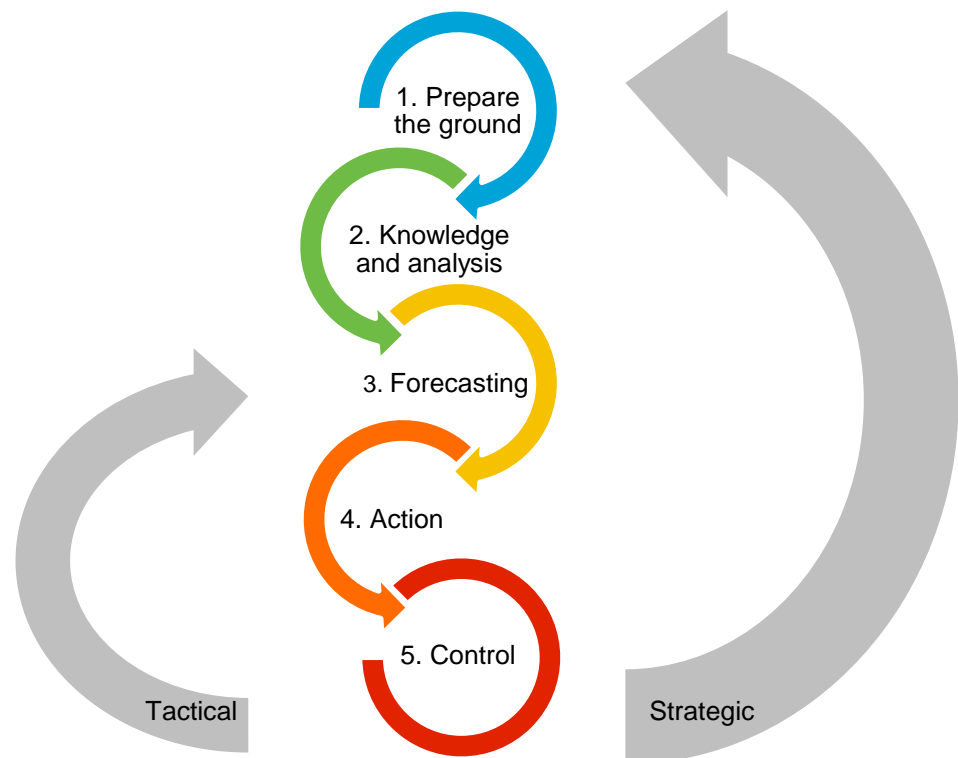
Source: own elaboration

The first step that any hotel should apply when implementing a yield management system has been named "prepare the ground". It is a crucial step because it is the base that will allow an effective yield management implementation. In this step, a yield management strategy needs to be defined (Emeksiz, Gursoy and Icoz, 2006). This strategy has to be coherent with the mission and vision of the hotel.

One of the most important activities consists of developing a yield management culture. Indeed, according to Talón-Ballestero, González-Serrano and Figueroa-Domecq (2014), the development of a culture is the most important element in order to implement a yield management system. Another important activity consists in training staff. As indicated by Farrell and Whelan-Ryan (1998), a necessity when implementing yield management consists of providing training for the employees both internally and externally. Employee's training is an investment that allows hotels to increase the professional value of the employees, and in consequence, allows a better yield management implementation.

Another activity that should be carried out when preparing the ground but has not been mentioned by previous analyzed authors is to gather as much information as possible in order to create accurate historical data. This activity has been included since to have access to information is a key point in order to forecast properly and the philosophy of storing all the available information needs to be implemented since the beginning.

The second stage of the yield management implementation model has been named "knowledge and analysis". The data that needs to be analyzed and understood can be divided in demand and supply areas.

On demand side, the hotel has to define which are the market segments to target. It is important to remember that segmentation is a key issue for yield management in order to maximize revenues when facing a non linear demand. As indicated by Talluri and Van Ryzin (2004), segmentation consists in understanding who is the consumer that is purchasing the product, what are the patterns followed when buying, what are the attributes valued and which is their willingness to pay. Furthermore, according to Talón-Ballestero, González-Serrano and Figueroa-Domecq (2014), aspects to be analyzed of each

segment are typology, origin, buying patterns, contribution to profit and distribution channel source.

On offer side, the hotel has to analyze both internal and external factors. As internal factors, it is important to understand which is the value proposition that the hotel has to offer to clients. As external factors, the hotel has to identify who are the competitors and monitor their supply, pricing structure, marketing strategies, and so further (Emeksiz, Gursoy and Icoz, 2006).

The third stage was named "forecasting". None of the authors analyzed stated a specific step as forecasting. For example, in the model proposed by Jones and Hamilton (1992) forecasting was included in the second step that they named demand analysis, whereas, Emeksiz, Gursoy and Icoz (2006) proposed forecasting in the third step called implementation of yield management strategies, where room allocation, capacity management and pricing decisions were also included. In this model, forecasting has been set as a single stage in the process because it is considered as a crucial activity in order to maximize revenue per available room (Talluri and Van-Ryzin, 2004).

In this stage, as indicated by Talón-Ballestero, González-Serrano and Figueroa-Domecq (2014), historical data that needs to be examined in order to obtain an accurate forecast is; type of customers, type of rooms sold, occupancy rate, number of denials, number of no-shows, number of walk-ins, average room rate, revenue per available room, gross operation profit, length of stay, key accounts in each segment, group conversion ratio and group denials, cancelations and declines. Furthermore, events that will take place such as conferences, exhibitions, games or concerts that have the capacity of provoking fluctuations in demand also need to be taken into account (Emeksiz, Gursoy and Icoz, 2006).

The fourth step was named "action". After the forecasting step, the hotel is ready to make room allocation, capacity management, and pricing decisions (Emeksiz, Gursoy and Icoz, 2006). This means that once the forecast has been done and the hotel manages a pick-up curve or "an estimation of expected reservations" (Talón-Ballestero, González-Serrano and Figueroa-Domecq, 2014), the hotel is ready to act allocating the right room, to the right client, at the

right time, through the right distribution channel and for the right price in order to maximize revenues (Kimes, 1989).

The fifth step was named "control". Control needs to be applied on two different sides. On one side there is the tactical or operational control and on the other side there is the strategic control. The tactical control, which should be applied on a daily basis (Jones and Hamilton, 1992), consists in comparing the forecast versus the evolution of real demand. As indicated by Jones and Hamilton (1992), real demand can deviate from the predicted one and the hotel needs to act accordingly in order to maximize revenue. The strategic control makes reference to the evaluation and correction of the current performance of the yield management system as a whole.

Now that we have presented the proposed yield management implementation model, it is necessary to conduct an empirical examination in order to gather information regarding the current yield management implementation level in hotels and test the validity of the proposed model.

5. EMPIRICAL EXAMINATION

The objective of this section is to carry out a field investigation analyzing the current state of yield management implementation in some hotels. In order to carry out this research, two activities were conducted. On the one hand, an online questionnaire was conducted in order to gather information regarding the actual yield management implementation level. On the other hand, personal interviews were conducted with professionals of the lodging sector in order to discuss deeply yield management implementation in the hotels where they work.

5.1. Questionnaires

5.1.1. Methodology

The population of the analysis was the hotels located in Majorca. Due to time limitations, the sample chosen was the hotels belonging to the Hotel Association of Andratx and the Hotel Association of Cala Ratjada.

To carry out this research, a self-administered online questionnaire was constructed in order to analyze the level of implementation of yield management at the hotels located in Andratx and Cala Ratjada. The questionnaire was developed with *Google Forms* in order to provide the maximum possible flexibility to respondents.

The questionnaire was written in Spanish and broken down in three parts. The first part of the questionnaire consisted of thirteen general questions in order to provide a basic characterization of the hotel. The second part of the questionnaire consisted of twentyone questions focused on studying the level of yield management implementation. The third and final part of the questionnaire consisted of five questions intended at gathering information about the respondent. Various types of questions were used, from single response, multiple responses, rating till open questions, depending on the information asked.

Once the questionnaire was ready, a pilot survey was run in order to test it, detect any flaws and correct these prior to the main survey (Alegre-Martín,

Cladera-Munar and Juaneda-Sampol, 2003). After the testing, the questionnaire was redesigned according to the provided feedback.

When the survey was ready to be carried out, a formal letter was written explaining the nature and objectives of the project and was sent by email to all the hotels together with the link that offered direct access to the online questionnaire. This letter and the questionnaire are attached in the appendix.

5.1.2. Results

The response rate of the hotels belonging to the Hotel Association of Andratx was 67% whereas the response rate of the hotels belonging to the Hotel Association of Cala Ratjada was 9%.

Figure 13- Response rate
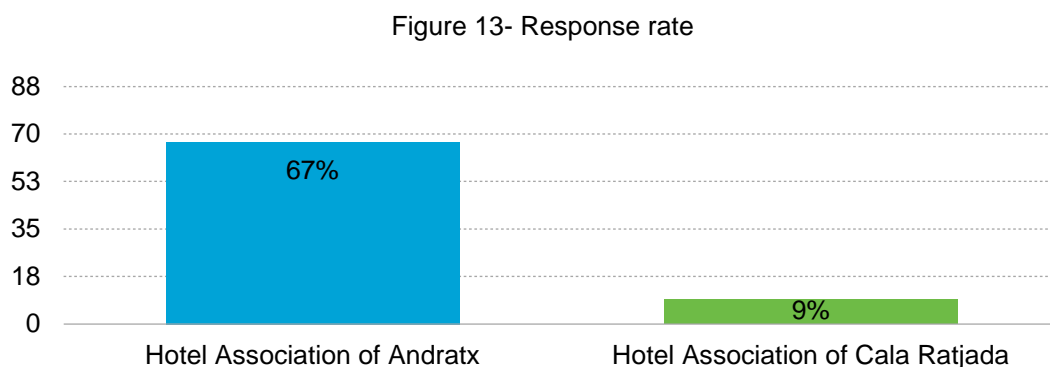
Source: own elaboration

The respondents of the Hotel Association of Andratx were;

- Steigenberger Golf & Spa Resort Camp de Mar

- Grupotel Playa Camp de Mar

- Mon Port Hotel & Spa

- Hotel Villa Italia

- Brismar Puerto de Andratx

- Apartamentos Villa Real

The respondents of the Hotel Association the Cala Ratjada were;

- Hotel Na Forana

- Hotel Amoros

As indicated in figure 14, 12.5% of respondents were two star hotels, 25% three star hotels, 50% four star hotels and the remaining 12.5% were five star hotels.
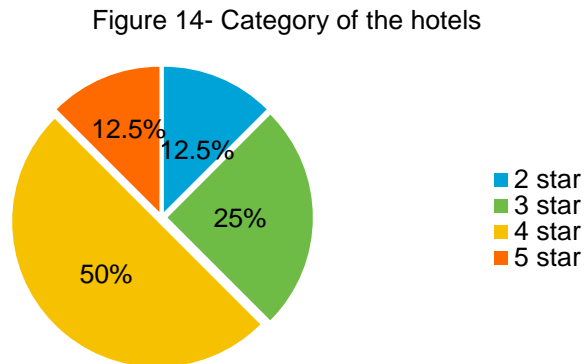
Figure 14- Category of the hotels

Source: own elaboration

Steigenberger Golf & Spa Resort Camp de Mar is a five star hotel located in Camp de Mar, Andratx. It features a total of 164 rooms, which are divided in eight different categories. This hotel does not operate the whole year closing its doors in December and January. The hotel is not managed by the property and operates in the market under the hotel chain Steigenberger.

Grupotel Playa Camp de Mar is a four star hotel located in Camp de Mar, Andratx. It features a total of 270 rooms, which are divided in ten different categories. This hotel does not operate the whole year closing its doors in October, November, December, January, February, March and April. The hotel is managed by the property, which is the hotel chain Grupotel.

Mon Port Hotel & Spa is a four star hotel located in Puerto de Andratx. It features a total of 133 rooms, which are divided in six different categories. This hotel does not operate the whole year closing its doors in November, December and January. The hotel is managed by the property and operates in the market under an independent brand.

Villa Italia is a four star hotel located in Puerto de Andratx. It features 21 rooms, which are divided in four different categories. This hotel does not operate the whole year closing its doors in January and February. The hotel is not managed by the property but by an independent brand.

Brismar Puerto de Andratx is a three star hotel located in Puerto de Andratx. It features a total of 48 rooms, which are divided in four different

categories. This hotel does not operate the whole year closing its doors in November. The hotel is not managed by the property but by an independent brand.

Apartamentos Villa Real is a two star hotel located in Camp de Mar, Andratx. It features a total of 33 rooms without any differentiation among those. This hotel does not operate the whole year closing its doors in November, December, January, February, March and April. The hotel is managed by the property and operates in the market under an independent brand.

Hotel Na Forana is a four star hotel located in Cala Ratjada. It features 210 rooms, which are divided in eight different categories. This hotel does not operate the whole year closing its doors in November, December, January, February, March and April. The hotel is managed by the property under an independent brand.

Hotel Amoros is a three star hotel located in Cala Ratjada. It features 80 rooms, which are divided in five different categories. This hotel does not operate the whole year closing its doors in December and January. The hotel is managed by the property under an independent brand.

As indicated in figure 15, a 62.5% of the hotels that responded the online questionnaire are managed by the property, whereas that a 37.5% are not managed by the property.

Figure 15- Owners that manage the hotel
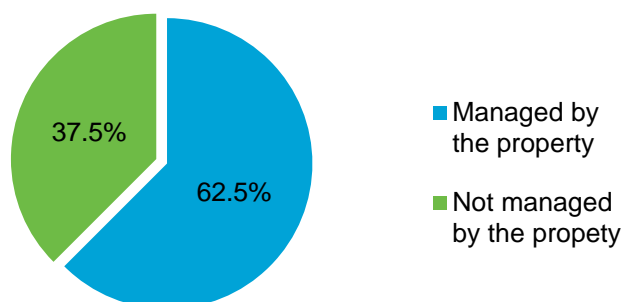
Source: own elaboration

As indicated in figure 16, a 75% of the hotels analyzed operate in the market under an independent brand, whereas that a 25% operate in the market under a hotel chain.

Figure 16- Hotels brand
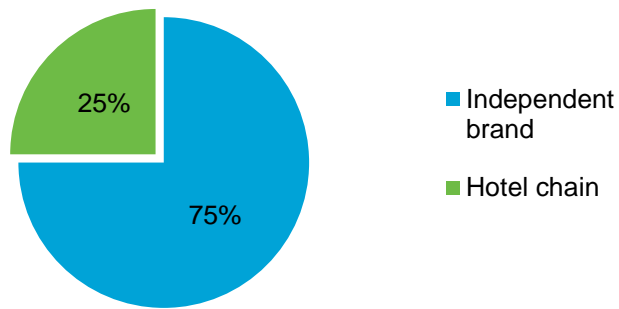
Source: own elaboration

Regarding the yield management implementation level, 50% of the hotels indicated that they have a formal defined yield management strategy whereas the remaining 50% indicated do not have it. Of the ones that indicated that they have a yield management strategy, 100% indicated that this strategy is coherent with the mission and vision of the company.

Figure 17- Yield management strategy
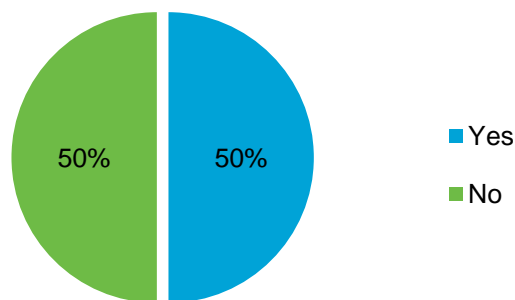
Source: own elaboration

As indicated in figure 18, 50% of the hotels indicated that there is a yield management culture whereas the remaining 50% indicated no.

Figure 18- Yield management culture
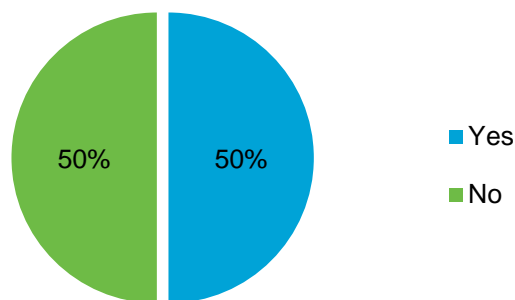
Source: own elaboration

Asking the hotels if there is a yield management department or a specific division in charge of this function, 25% answered yes, 50% answered that yield management functions were integrated in another department or division and the remaining 25% indicated neither there is a specific yield management department nor it is integrated in other departments or divisions of the hotel.

Figure 19- Yield management department
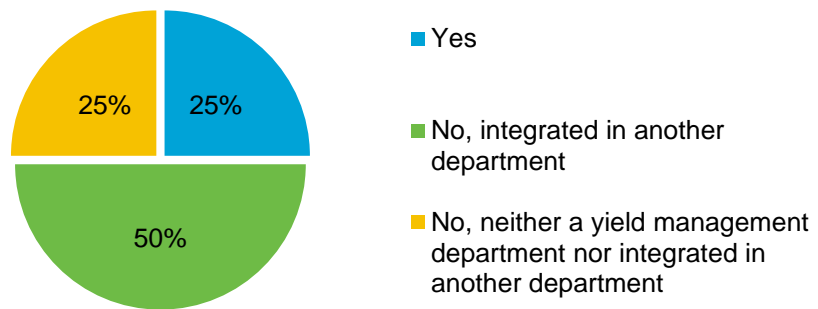
Source: own elaboration

As indicated in figure 20, 87.5% of the hotels indicated that they managed a historic database that encompasses information regarding reservations, occupation and applied rates along recent years. Among the 87.5% hotels that indicated they managed a historical database, only a 14.3% indicated that they use a specific software in order to manage this database.

Figure 20- Database
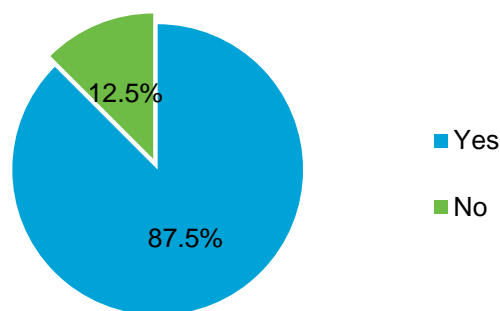
Source: own elaboration

Figure 21- Yield management software

14.3%

85.7%

■ Yes
■ No
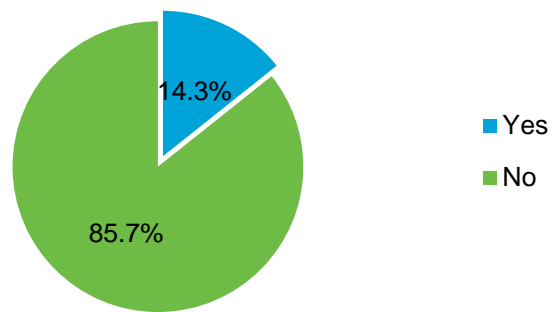
The respondents that indicated they managed a historic database, were asked to rate from 1 till 5, being 1 very low and 5 very high, the degree of usefulness that the mentioned historical database offered them in order to forecast future demand. As indicated in figure 22, 14.3% of respondents rated with a 3 the degree of usefulness of their historical database, 28.6% with a 4 and the remaining 57.1% with a 5.

Figure 22- Historic database usefulness
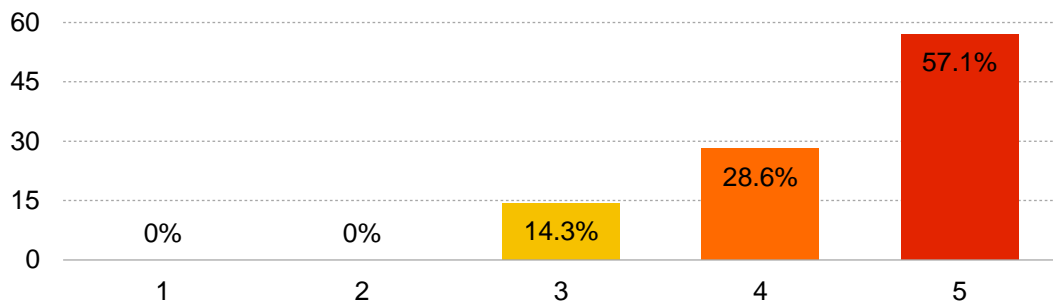
The online questionnaire asked hotels, which was the typical profile of the clients staying at the hotel. A list of options was suggested and the respondents could choose more than one option. The proposed segments were leisure, business and congresses, imserso, weddings, cycling and others. All eight hotels indicated the leisure segment to be the guest profile in their hotels. Indeed, 62.5% only indicated this segment. Nevertheless, other respondents also indicated business and congresses, cycling, golf and weddings. Accurately, 25% also indicated business and congresses, and 12.5% indicated cycling, golf and weddings.

Regarding client's nationality, 37.5% of hotels identified Germany as their only client's nationality and 25% Great Britain. Nevertheless, one hotel identified Germany and Great Britain, other hotel Germany, Great Britain and Scandinavia and other hotel Germany, Great Britain, Scandinavia and Spain.

The questionnaire also asked respondents about their distribution mix. Figure 23 summarizes the results obtained. On the x axis, the four distribution channels indicated by the hotels are represented and on the y axis the percentage that each distribution channel has over the total is represented.

Figure 23- Hotels' distribution mix
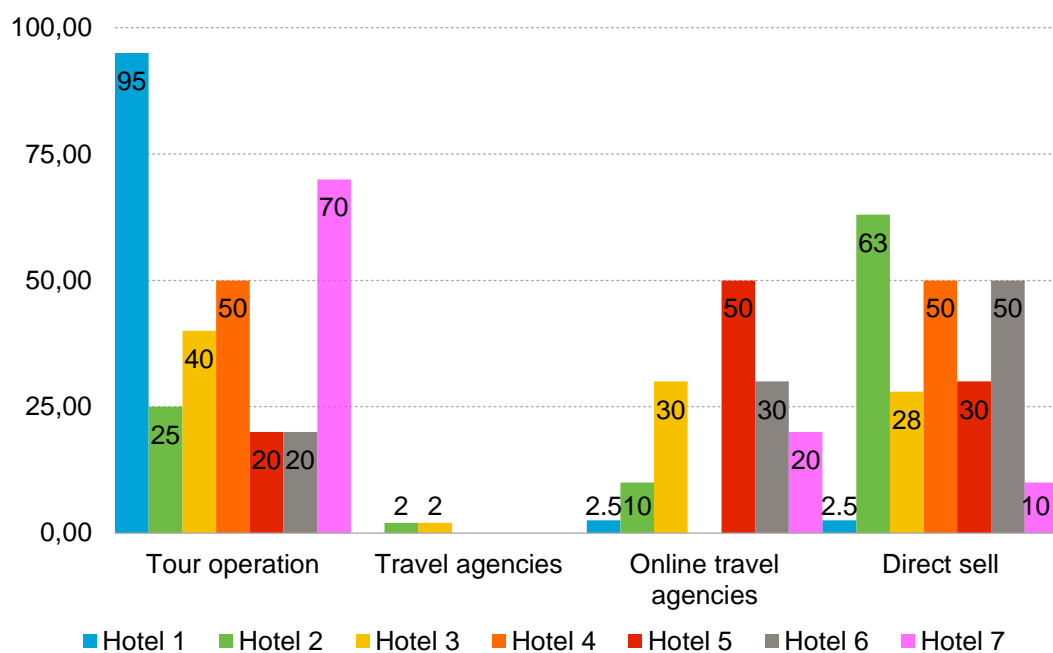
Source: own elaboration

Hotels were asked how often they review demand's forecast and adjust rates according to the actual demand's behavior. As indicated in figure 24, 37.5% respondents indicated on a daily basis, other 37.5% indicated more than once per week and the remaining 25% indicated once per week.

Figure 24- Rates adjustment

Legend:
- Daily basis
- More than once per week
- Once per week
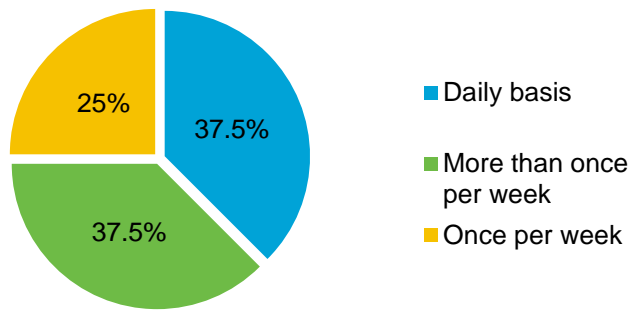
Source: own elaboration

The questionnaire also asked hotels which benchmark activities they carry out. The suggested ones were to track competitor's prices, services offered by competitors, competitor's distribution strategies and products and complimentary services offered by competitors. As indicated in figure 25, 87.5% indicated they track competitor's prices, 62.5% services offered by competitors, 50% competitor's distribution strategies, 50% products and complementary services offered by competitors and 12.5% indicated that no one of the proposed activities were carried out by the hotel.

Figure 25- Benchmark activities
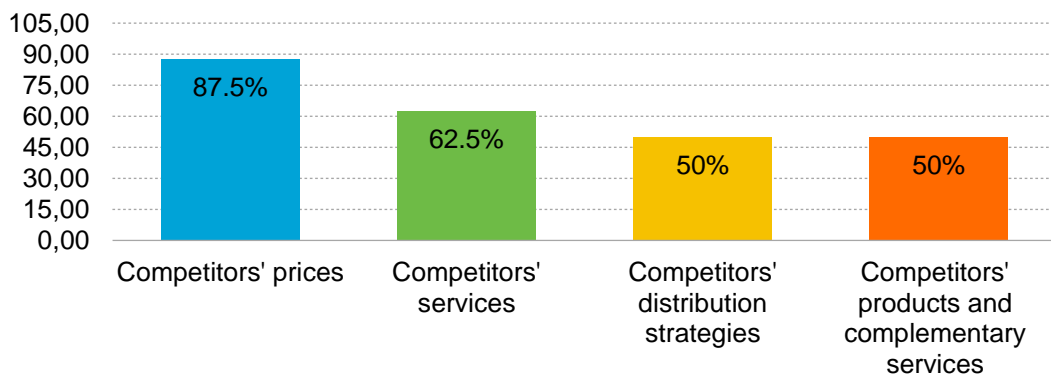
Source: own elaboration

Regarding overbooking techniques in order to manage occupancy and achieve higher revenues, 62.5% of respondents indicated that the hotel does not use overbooking techniques, whereas 37.5% indicated yes.

Figure 26- Overbooking

Yes 37.5%
No 62.5%
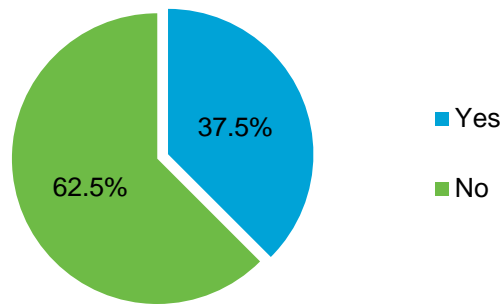
Source: own elaboration

The questionnaire asked about employees' yield management training. As indicated in figure 27, 50% of respondents indicated that the hotel offered yield management training to employees, 12.5% indicated that the director was the only one that received training and 37.5% indicated that neither the hotel offered yield management training to employees nor was aware that employees did yield management courses by themselves.

Figure 27- Training

■ Employees recived training

■ Only the director recived training

■ Neither the hotel offered training to employees nor is aware they did yield managemetn courses by themselves

Source: own elaboration

The hotels were asked if thanks to yield management implementation, the hotels were able to increase revenue per available room and if they also achieved any other type of non economical benefit thanks to yield management implementation. As indicated in figure 28, 75% of the hotels indicated that they were able to increase revenue per available room thanks to yield management implementation and, as indicated in figure 28, also 75% of the hotels indicated that they achieved other non economical benefits thanks to yield management implementation.

Figure 28- Revenue per available room increase

25%

75%

■Yes

■No
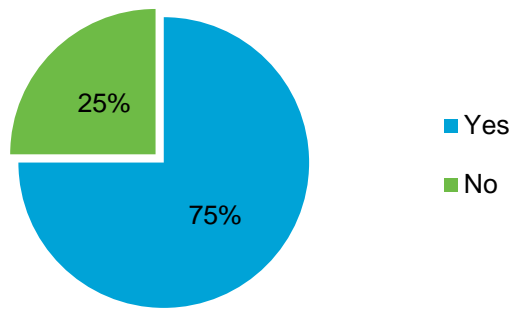
Source: own elaboration

Figure 29- Non economical benefits

25%

75%

■Yes

■No
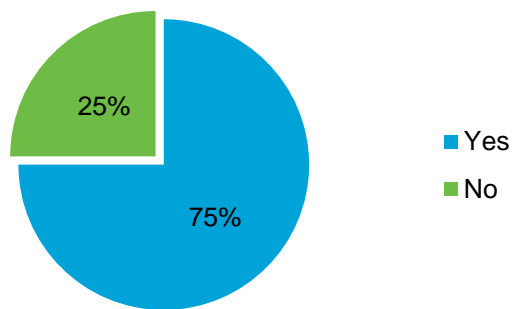
Source: own elaboration

The 75% of the hotels that indicated they achieved other non economical benefits thanks to yield management implementation were asked to outline these benefits. The hotels indicated that yield management implementation allowed them to know better competitors' strategies and demand's behavior, then, being able to improve their own four P's and adapt their marketing mix to market exigencies. They also indicated that achieving better revenue per available room can be linked to employees compensation policies and therefore improve resources management. Other hotels indicated the possibility to offer the best rooms to the best clients, a better relationship between what the client pays and what the client receives, management and prices control, reservations much far in advance and finally an improvement in rates application, loyalty and clients' satisfaction.

Hotels were asked about possible barriers in order to implement yield management. As indicated in figure 30, 50% of the hotels indicated lack of technological capacity as a barrier in order to implement yield management, 37.5% indicated lack of employees training and another 37.5% indicated that

the hotel distributes a great majority of rooms through tour operators, limiting thus the possibility to apply yield management strategies.

Figure 30- Yield management implementation barriers
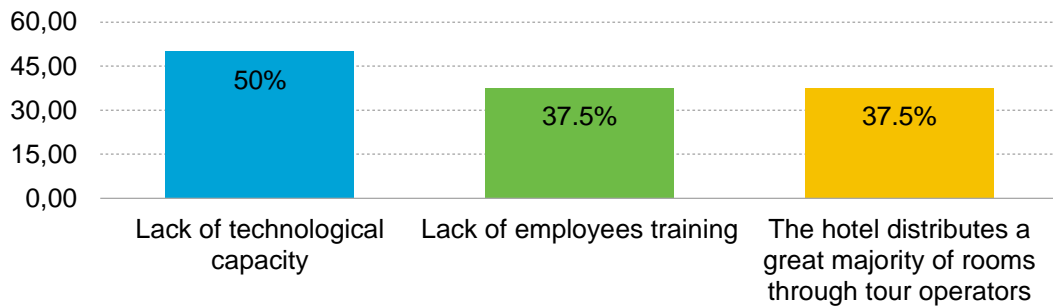
Finally, hotels were asked to rank from 1 till 5, again being 1 very low and 5 very high, the yield management implementation level at the hotel. As indicated in figure 31, 12.5% ranked the yield management implementation level as 1, another 12.5% as 2, 37.5% as 3, 25% as 4 and finally 12.5% as 5.

Figure 31- Yield management implementation level
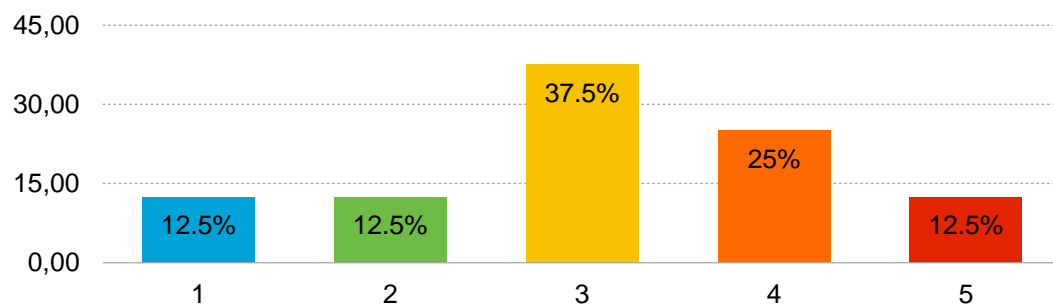
The results of respondents' profile are attached in the appendix.

5.2. Personal interviews

5.2.1. Methodology

Two personal interviews were conducted with professionals of the sector in order to discuss about the yield management implementation in the hotels where they work in greater detail. The first interviewee was Juan Guillermo Mesquida Jaume representing the Steigenberger Golf & Spa Resort Camp de Mar, which is one of the hotels that belong to the Hotel Association of Andratx. The second interviewee was Elisabet Gili Massanet representing the Hotel Na

Forana, which is one of the hotels that belong to the Hotel Association of Cala Ratjada. The interviews followed were semi-structured with the aim of attaining a deeper understating of the yield management implementation level in their hotels according to the answers that they previously provided through the questionnaire.

5.2.2. Results

Juan Guillermo Mesquida Jaume is the financial controller of the five star hotel Steigenberger Golf & Spa Resort Camp de Mar, which is one of the hotels with the strongest yield management implementation. This hotel is not operated by the property but by the second tier management company RIMC international under the franchise Steigenberger Hotels and Resorts.

Regarding if there was a yield management department, he explained that yield management function was integrated in the sales department. Indeed, he pointed out that the majority of the hotels do not differentiate yield management in a separate specific department.

In the questionnaire he indicated that the hotel does not use a specific yield management software in order to forecast demand. We asked him about that and he answered that the hotel uses Microsoft Excel and that this software allows powerful data crunching. We asked him about the process they follow and he said that based on the historical data that the hotel stores, pick-up curves are constructed and then these are compared with actual demand curve. Moreover, they also take into account special future events inserting this information in the spreadsheet. Depending if actual demand is below or above pick-up curves, the hotel opens or closes rates according to the necessity. As the lector may notice, this procedure is the yield management method indicated in section three named threshold curve method.

We asked him about client's segmentation and he indicated that because of the location and typology of the Steigenberger Golf & Spa Resort Camp de Mar, they do not apply leisure versus business segmentation as indicated in revised literature as the key in order to apply yield management at a hotel. This hotel is targeted at leisure clients, nevertheless, they do apply segmentation according to the moment of reservation. As he says "one person can not do a

reservation in two different moments of time". Moreover, he also indicated that the hotel can also segment according to the channel of reservation and the typology of the client. As he pointed out, the hotel can offer different rates according to the typology of reservation. That is, they can offer a lower rate to a group that comes with the German Golf Association and a higher rate to an individual that comes individually.

He made reference to the importance of maintaining price integrity. By this, he means that the justification of price discounts should be based for example on an advanced purchase rate or that a person came with the German Golf Association. This way, price discounts are justified without causing morale problems on customers and avoiding clients' dissatisfaction.

Talking about distribution channels, we asked him about the effect of commercializing through tour operators on yield management application. This hotel is the one that presents a higher percentage of direct sales, approximately above 60%. He explains that the hotel signs a contract with the tour operators where it only offers the least appealing rooms, which are the ones without sea view. For this allotment of rooms, different prices are set according to the season. It is supposed that those prices are fixed, however, the tour operator always ends calling the hotel asking for discounts and pushing prices down explaining that the sells are going bad and so on. Then, you can only open lower rates for the rooms distributed through tour operation, not higher.

Moreover, he also points out that tour operators do not tend to inform the hotel of the actual number of rooms that they have sold, as pointed out before in order to get discounts. This supposes a problem for the hotel because it does not manage demand in real time since the hotel does not have information about the real sells that the tour operator has achieved.

As pointed out previously, against this background, the hotel plays the strategy of assigning the least appealing rooms to tour operators. Then, if a client that has booked through tour operation comes to the hotel and asks for a sea view room, the hotel can offer him or her an upgrade to a sea view room according to the availability. This strategy accomplishes with price integrity because it is differentiating prices over product's typology.

Furthermore, he also emphasizes the importance of maintaining channel consistency or parity rate, which means maintaining the same rates for the same product in all the distribution channels that the hotel chooses in order to commercialize its product.

We asked him why the hotel does not apply overbooking. He explained that nowadays it is not necessary to apply overbooking and that this belongs to the distribution model of the past. In the past, when the hotels distributed the whole rooms' inventory through tour operation, the hotels used to contract with several tour operators and the sum of their allotments was always higher than the hotel's capacity because the hotel did not expected each tour operator to sell the whole rooms allotment. Then, according to the historic rate of fulfillment, the hotels offered more rooms than the real ones in order to sell the whole rooms inventory.

He explained that in the current distribution scheme, it is not necessary anymore because with the new distribution channels, the hotel is able to control the demand at any time or actual room inventory on market. We asked him about the possibility of applying overbooking according to a forecast of no-shows. Nevertheless, he answers that this would be like gambling. Furthermore, he points out that booking policies already imply that the client pays the room in advance, many times with a non refundable policy, and if not, if the client does not show up without cancelling the reservation, the hotel has the right to charge a specific amount on client's credit card.

Finally, we asked him about the current state and future challenges of the hospitality industry in Majorca. He said that two key concepts were, on the one hand, learn to sell and, on the other hand, disintermediation. He pointed out that Majorcan hoteliers only have been paying attention to hotel's management; nevertheless, they have neglected the selling side. It is absolutely important learn to sell the product that we have. In fact, he cites that last summer he visited a hotel in Cala Figuera that did not differentiate sea view rooms from others. This is a big problem that some Majorcan hoteliers haven't addressed yet. The hotels must differentiate the product that is selling because clearly a room with sea views has a greater value for a client than another one with street views. Then, hotels need to differentiate prices between different rooms in order

to maximize revenues. Furthermore, he points out that the market is moving toward a disintermediation model selling the product directly without having to pay commissions to intermediaries. Nevertheless, even that the current environment has reduced tour operators dependency, no one knows if those big groups will disappear or no or new ones will appear. Moreover, other big groups are dominating the market such as online travel agencies. He points out that hotels need to find a proper way to sell the product selling through channels at the most competitive commission. His intuition tells him that probably new technological companies that will manage hotel's yield management and commercialize their products will arise.

The second interviewee was Elisabet Gili Massanet. She is the deputy general manager at the four star hotel Na Forana, which is located in Cala Ratjada. This hotel is operated by the property and operates independently in the market without any hotel chain brand.

She explains that her grandfather founded the business. In the beginning, it was a hostel and a very renowned discotheque in Majorca. In 2003, her father took the decision of reforming the building achieving a category upgrading becoming thus a four star hotel.

Asking her about the yield management implementation level at the hotel, she answers that their yield management strategies are very rudimentary. She points out, that their distribution strategy is through tour operation. Then, it limits the possibility to apply yield management at the hotel. She explains that the tour operator is the one that sets the prices according to the reputation that the hotel has achieved in online sites, such as for example in HolidayCheck, which is the biggest online opinion site in Germany and also according to the location of the hotel.

Furthermore, she also indicates that Na Forana is an individual hotel run by the family, and consequently the necessary resources in order to apply yield management are scarcer than in big hotel chains. Indeed, she points out that it lacks technological capacity in order to establish a proper yield management implementation system.

Finally, she outlines that they are concentrated in offering a great product and service to their clients in order to make them become loyal clients. Nevertheless, she points out that they think about establishing a more dynamic and diversified distribution mix in the future in order to introduce a higher yield management implementation level in the management of the hotel.

6. CONCLUSIONS

The main objective of this project was to propose a yield management implementation model that hotels could follow in order to maximize income revenues selling the right room, to the right costumer, at the right time, for the right price and through the right distribution channel (Kimes, 1989).

After explaining the causes and consequences that justify the importance of yield management implementation and exemplifying some of the most important yield management analysis methods, an own sequential yield management implementation model was proposed based in others authors' research.

Afterwards, a field research investigation was conducted in order to gather information regarding the yield management implementation level at eight different hotels.

6.1. Results discussion

After carrying out the empirical analysis of yield management implementation level both through the online questionnaire and the personal interviews, we are able to set as an overall conclusion that on average, the yield management implementation level in the hotels analyzed is medium-low. Nevertheless being quite high in some hotels and low or nonexistent in other hotels.

As indicated in the proposed yield management implementation model, a crucial step that hotels need to follow in order to implement an effective yield management system is to develop a yield management strategy (Emeksiz, Gursoy and Icoz, 2006) and a yield management culture (Talón-Ballestero, González-Serrano and Figueroa-Domecq, 2014). Nevertheless, as indicated in figures 17 and 18, only 50% of the analyzed hotels indicated that there is a yield management strategy and culture at the hotel. We consider that this is an issue that should be taken into account since it is considered as the ground or basis in order to achieve an effective yield management implementation.

Furthermore, as indicated by Whelan-Ryan (1998) employees' yield management training is essential and as indicated in figure 27, 37,5% of

analyzed hotels answered that neither the hotel offered yield management training to employees nor was aware that employees did yield management courses by themselves. Consequently, as indicated in figure 30, also 37,5% of hotels identified lack of employees training as one of the barriers regarding an effective yield management implementation. We consider this to be a great percentage of hotels that should support employees training in order to provide them with the necessary knowledge and tools that will allow a good yield management implementation. As indicated in the proposed model, training has to be understood as a necessary investment that allows hotels to increase the professional value of the employees, which in turns supposes a better yield management implementation results.

As indicated in figure 20, 12,5% of the hotels analyzed indicated not to manage a historic database that encompasses information regarding reservations, occupation and applied rates along recent years. We strongly recommend to this 12,5% to gather all the mentioned information and create a database in order to forecast future demand accurately and apply appropriated rates according to the results. On the other side, it is necessary to mention that as indicated in figure 22, 57,1% of respondents, ranked database usefulness as very high in order to forecast future demand, which means that those that manage a database, are doing a proper management of it and are conscious of the importance of it when forecasting future demand.

According to Cross (1997), in order to sell the whole rooms' inventory at different rates maximizing revenue, client's segmentation needs to apply. In the proposed yield management implementation model, market segmentation is included in the second step named knowledge and analysis. When we asked hotels about the typical profile of the clients staying at the hotel, all of them identified the leisure segment. Indeed, 62,5% only indicated this segment. Through the personal interviews, we attempted to gather more information regarding client's segmentation and we were told that because of the location and typology of the hotels analyzed, leisure versus business segmentation does not apply, nevertheless they do apply segmentation according to the moment of reservation in order to apply yield management strategies.

We think this to be an interesting finding because while it is true that in revised literature the common mechanism used to segment customers is the time of purchase (Weatherford and Bodily, 1992), the great majority of authors differentiate the time of purchase of two different segments, which are leisure travellers versus business travellers (Netessine and Shumsky, 2002; Donaghy, McMahon and McDowell, 1995; Weatherford and Bodily, 1992; Kimes 1989; Relihan, 1989). However, as indicated in the empirical analysis conducted, it is possible to apply yield management strategies segmenting over the leisure segment taking as a differential trait the moment of reservation. As indicated by one of the executives interviewed "one person can not do a reservation in two different moments of time".

As indicated in the proposed model, benchmark activities need to be conducted as an external supply factor in the knowledge and analysis step. Indeed, hotels have to identify which are the competitors and monitor their rooms supply, pricing structure, marketing strategies, and so further (Emeksiz, Gursoy and Icoz, 2006). As indicated in figure 25, 87,5% of the hotels analyzed indicated that they track competitor's prices, 62,5% also services offered by competitors and 50% also competitor's distribution strategies and products and complementary services. We consider that in general the hotels are doing an adequate use of benchmark activities nevertheless we have to point out that a 12,5% is not carrying out any of these activities and we strongly recommend that should be carried out in order to determine its position regarding the competitive set.

In yield management literature we did not find many references to hotel's distribution channels. Most authors simply suppose that hotels are able to open and close rates without taking into consideration the distribution mix of hotels. Nevertheless, after carrying out the empirical analysis, we found that hotel's distribution strategies were an important topic since some distribution channels such as tour operators, imply a rigid rate structure that does not allow the dynamic pricing that yield management implementation requires. As indicated in figure 23, 28,57% of analyzed hotels, distribute more than 70% of their rooms through tour operation. This fact limits their possibility to apply yield management and maximize revenues per available room. We strongly

recommend these hotels to go for another distribution mix that allows applying dynamic pricing according to demand levels.

As indicated in the proposed model, both tactical and strategic control has to be applied in order to ensure and evaluate the correct functioning of yield management. Regarding tactical control, hotels were asked how often they review demand's forecast and adjust rates according to the actual demand's behavior. As indicated in figure 24, analyzed hotels are applying an optimal tactical control since 37,5% answered that they do it on a daily basis, which is the frequency that Jones and Hamilton (1992) recommend. The remaining hotels indicated either more than once per week (37,5%) or once per week (25%). Then, we consider that on average all the hotels are applying an adequate tactical control over the yield management system.

6.2. Implications

Findings suggest that the yield management implementation model proposed in figure 12 based in other authors' research would be a good guidance for the hotels analyzed in the empirical analysis in order to improve their yield management implementation level and in consequence maximize revenue per available room.

As indicated in results discussion, on average the yield management implementation level at the analyzed hotels is medium-low according to the information gathered through the questionnaires and personal interviews.

We considerer that hotels yield management system's deficiencies can be effectively overcame through the proposed yield management system. Remember that it proposes a first step called prepare the ground where the yield management strategy is defined, yield management culture is spread, employees are trained and a data base is constructed. The second step named knowledge and analysis implies market segments identification, value proposition analysis and competitors track. The third step consists in forecasting, the fourth in acting and the fifth in controlling.

6.3. Limitations and future research

It is necessary to point out that the empirical research poses some limitations to the project since the sample was relatively small and whereas the response rate of the hotels belonging to the Hotel Association of Andratx was 67%, the response rate of the hotels belonging to the Hotel Association of Cala Ratjada was only 9%.

Finally, we would like to suggest a future research investigation regarding the yield management implementation level in Majorca taking as a basis the proposed yield management implementation model and questionnaire in order to carry out an investigation at a larger scale.

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8. ANNEX

Estimado Sr./Sra.,

Mi nombre es Montserrat Gatnau y soy estudiante del Grado en Turismo en la Universidad de las Islas Baleares. Actualmente estoy realizando el trabajo de fin de grado y el tema de mi trabajo es "Implementación del Yield Management en hoteles de Mallorca". La primera parte del trabajo consiste en un marco teórico y la segunda en un estudio empírico referente al grado de implementación del yield management.

Para ello necesitamos su colaboración, pues resulta de vital importancia recabar datos empíricos para poder realizar un diagnóstico adecuado referente al grado de implementación del yield management. Junto a mi tutor, el profesor Abel Lucena, hemos desarrollado un cuestionario con el fin de poder evaluar la implementación de dicha práctica. Para ofrecerles la máxima flexibilidad posible, el cuestionario se ha elaborado online mediante una herramienta de google. Por lo tanto, para contestar sencillamente deben clickar el link que les facilitamos a continuación.

https://docs.google.com/forms/d/1j9EfAkSfHPOFHz1wscx-KcWwwmceumbzf9eQ2s4DGuY/viewform

Por último, deseamos recordarle que garantizamos en todo momento la confidencialidad de los datos obtenidos mediante el cuestionario. Estos únicamente se utilizarán de modo agregado en la realización del diagnóstico en el marco del trabajo de fin de grado.

Agradeciendo desde ya su colaboración,

Montserrat Gatnau

DNI 43209675-N

ESTUDIO SOBRE LA IMPLEMENTACIÓN DEL *YIELD MANAGEMENT* EN MALLORCA

NATURALEZA, CARACTERÍSTICAS Y FINALIDAD

Esta encuesta ha sido desarrollada por la alumna del Grado en Turismo de la Universidad de las Islas Baleares, Montserrat Gatnau con la ayuda de su tutor Abel Lucena con el fin de realizar un estudio empírico sobre el grado de utilización del *yield management* en hoteles en Mallorca.

La información proporcionada se utilizará única y exclusivamente para la realización de un diagnóstico sobre la implementación del *yield management* en el marco del trabajo de fin de grado de la alumna.

BLOQUE I

Este bloque pretende recolectar información básica para la

caracterización del hotel

Nombre del establecimiento

[   ]

Categoría del hotel

     ○   3 estrellas

     ○   4 estrellas

Dirección

[   ]

Número total de habitaciones

[   ]

Número de tipo de habitaciones diferentes

Por ejemplo habitación estándar, habitación superior vista montaña,

habitación superior vista mar, suite, etc.

[   ]

¿El hotel abre todo el año?

     ○   Sí

     ○   No

¿En qué meses cierra el hotel?

[   ]

¿La propiedad gestiona el hotel?

     ○   Sí

○   No

¿La gestión del hotel es...?

○   Con marca propia

○   Con franquicia

¿El gestor del hotel lo hace a través de...?

○   Un contrato de gestión

○   Alquiler

¿Cómo opera el hotel en el mercado?

○   Independiente

○   Con cadena hotelera

Nombre de la cadena

[   ]

La cadena hotelera se encarga de:

Puede marcar más de una opción

☐   Comercialización de las habitaciones

☐   Servicios centrales

☐   Otro: [   ]

BLOQUE II

Este bloque pretende analizar el grado de implementación del yield management. El yield management, también conocido como revenue management, es entendido como la aplicación de sistemas de información y estrategias de precio para asignar la habitación adecuada, al precio adecuado, al cliente adecuado, en el momento adecuado y a través del canal adecuado con el objetivo final de maximizar el ingreso por habitación disponible.

¿Existe una estrategia de *yield management* formalmente definida?

- ○ Sí

- ○ No

¿La estrategia *de yield management* es coherente con la misión y la visión de la empresa?

- ○ Sí

- ○ No

¿Existe una cultura de *yield management* que compartan todos los empleados del hotel?

- ○ Sí

- ○ No

¿Existe un departamento o una división específica encargada de la gestión del *yield management*?

- ○ Sí

- ○ No, las funciones y gestión del *yield management* están integradas en otro departamento o división

- ○ No, ni existe un departamento específico, ni las funciones de

yield management están integradas en otras divisiones o

departamentos del hotel

¿Se dispone de una base de datos sobre las reservas, la ocupación y las tarifas aplicadas durante los últimos años?

⚬ Sí

⚬ No

Valore el grado de utilidad que le ofrece la base de datos a la hora de predecir el nivel de demanda futura

Muy bajo ⚬ ⚬ ⚬ ⚬ ⚬ Muy alto

1   2   3   4   5

¿Utiliza el hotel un software específico para la aplicación del *yield management*?

⚬ Sí

⚬ No

Por favor, indique la denominación del software

[   ]

El perfil del cliente habitualmente alojado en el hotel es:

Puede marcar más de una opción

☐ Vacacional

☐ Negocios y congresos

☐ Imserso

☐ Bodas

☐ Cicloturistas

☐ Otro: [   ]

Las nacionalidades de los clientes que se alojan en el hotel suelen ser:

Puede marcar más de una opción

- ☐ Alemanes

- ☐ Británicos

- ☐ Españoles

- ☐ Otro: [   ]

¿A través de qué canales comercializa el hotel sus plazas?

Puede marcar más de una opción

- ☐ Tour operación

- ☐ OTA's

- ☐ Agencias de viajes

- ☐ Venta directa

- ☐ Otro: [   ]

Por favor, indique aproximadamente el peso en % que tienen los canales citados anteriormente:

[   ]

¿Con qué frecuencia se revisa la previsión de la demanda y se cambian tarifas en función del comportamiento observado de la demanda?

- ○ Diariamente

- ○ Más de una vez por semana

- ○ Una vez por semana

○ Más de una vez al mes

○ Una vez al mes

○ Más de una vez por temporada

○ Una vez por temporada

○ Nunca

El hotel realiza un seguimiento de:

Puede marcar más de una opción

☐ Los precios de los competidores

☐ Los servicios ofrecidos por los competidores

☐ Las estrategias de distribución de los competidores

☐ Productos y servicios complementarios ofrecidos por los competidores

☐ No se realiza ninguna de las actividades anteriores

☐ Otro:

¿Utiliza el hotel técnicas de overbooking para gestionar la ocupación y obtener mayores ingresos?

○ Sí

○ No

¿Los empleados de su hotel han recibido formación referente al *yield management*?

○ Si, el propio hotel se la ha proporcionado

○ Si, los empleados han invertido en su propia formación, realizando por su cuenta cursos en el área de *yield*

management

○ No, el hotel no la ha proporcionado ni tiene constancia de que sus empleados hayan realizados cursos de *yield management*

○ Otro: [____]

Gracias a la implementación del *yield management*, ¿el hotel consigue incrementar el ingreso por habitación disponible?

○ Sí

○ No

Gracias a la implementación del *yield managment*, ¿el hotel consigue algún tipo de beneficio no económico?

○ Sí

○ No

Por favor, describa los beneficios no económicos obtenidos

[____]

¿Cuáles de las siguientes causas ocasionan dificultades para la implementación del *yield management*?

Puede marcar más de una opción

☐ Falta de información que permita realizar una predicción de la demanda

☐ Falta de capacidad tecnológica

☐ Falta de formación por parte de los empleados

☐ Falta de apoyo por parte de la dirección

☐ No es competencia del hotel la fijación de los precios, los cuales vienen determinados por la cadena

☐ El hotel comercializa la gran mayoría de las habitaciones a

través de tour operación, limitando así la posibilidad de aplicar

estrategias de *yield management*

☐ Otro: ⬚

Finalmente evalúe el grado de implementación del *yield management*

en el hotel

Muy bajo ○ ○ ○ ○ ○ Muy alto

1   2   3   4   5

BLOQUE III

Las preguntas de este bloque pretenden recolectar información referente

al perfil del encuestado

Cargo que ocupa usted en el hotel

Sexo

○ Hombre

○ Mujer

Edad

○ menor o 30

○ 31-40

○ 41 o mayor

Formación

○ Sin cualificación (estudios de primaria)

○ Secundaria

○ Universitaria

○ Otro:

Años de experiencia en el sector turístico

○ Menos de 1 año

○ Entre 1 año y 5 años

○ Entre 6 años y 10 años

○ Más de 10 años

RESPONDENTS PROFILE RESULTS

Job position

- Management
- Reception

12,5%

87,5%

Sex

- Man
- Woman

50%   50%

Age

- Less than 30
- 31 - 40
- 41 or more

25%

12,5%

62,5%

Studies

- Secondary
- University
- Others

12,5%

25%

62,5%

Years of experience in the tourism sector

- 1 - 5
- 6 - 10
- More than 10

20%

20%

60%

63