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CONSUMER'S SATISFACTION - EXPLANATORY MODELS

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CONSUMER'S SATISFACTION: EXPLANATORY MODELS

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Abstract

When in the sixties the first works dealing with consumer's satisfaction appeared nobody could imagine the relevance that they would reach soon after. Nowdays not only the private sector companies give part of their resources to the study of the customers' degree of satisfaction, but more and more there is an increasing concern about this aspect in the public sector. There is a wide literature dealing with patients', taxpayers', or tourism destination's satisfaction. In the first part of this paper there is a review of the different models applied to explain the customers' degree of satisfaction, distinguishing between cognitive and affective-cognitive models. In the second part, an empirical study is performed, where using the relevant variables in the expectations confirmation model (perceptions, expectations and discrepancies) alternative logit models are estimated. In these models, the tourist that visit Tenerife are classified as satisfied or unsatisfied, according to a set of destination attributes. For that purpose two surveys are used, the first one is performed when the tourist arrives at his desnitation, and the other one when he leaves it. Since the individuals are not the same in both surveys, statistical inference is applied in order to use all the available information. The best model is obtained when the expectations and the perceptions are combined reaching a percentage of right classification above 75%. However, the determinant elements that make the tourist feels satisfied or unsatisfied are each attribute perceptions.

Key words: Satisfaction, expectations confirmation, logit models

Field: Industrial and Services Economy

1. Introduction

Knowing the degree of satisfaction of the visitors is very relevant for all the social agents given the great weight of the 3rd sector in the Economy of Tenerife. The recognition of this relevance by the Government has promoted the carrying out of several advertising campaigns in the tourists' home countries during international fairs of the sector, and image campaings that increase the residents' concern of the need of keeping their island clean, or campaings that enphasize the importance of having pleasant manners with the visitors. In this sense, Tenerife interisland council has been performing for some years surveys to the tourists visiting the island, and data about expectations and perceptions of a wide set of variables have been gathered. These data will be analysed in the present research.

As can be seen in the second section, it is not easy to find a quantifiable definition of the customer's satisfaction that is accepted by a wide number of researchers, but it does exists that agreement about the consequences of the customer's satisfaction on the organisation. The literature shows the existence of a strong link between the customer's satisfaction and his loyalty and his repurchasing intention (Anderson and Sullivan, 1993; Bearden and Teel, 1983).

This paper is developed in five sections: in the second section the concept of satisfaction and the problems derived are defined; in the third one a review of the different models used in the literature to explain the satisfaction behaviour are performed; in the fourth section an empirical application is carried out where different logit models are estimated, and finally, the conclusions obtained are shown in the last section.

2. The consumer's satisfaction: a concept of difficult deffinition

When a review of the literature about satisfaction is done, the first thing which calls one's attention is the great diversity of definitions which have been proposed about it. On the one hand, this fact could be considered as an advantage, in the sense that researchers show a great interest in this field, but on the other hand, such a wide diversity of definitions shows also a great complexity. According to Giese and Cote (2000), the inexistence of a common definition impedes the researchers to select an appropiate definition for a given context, so that they can develope valid measures of satisfactions and can compare and interprete empirical results.

From Oliver's paper (1997), a sentence which summarizes these questions can be extracted: "Everybody knows what satisfaction is until its definition is asked. Then, suddenly, it seems that nobody knows it". In order to avoid this problem, many researchers have developed their studies assuming that satisfaction has already been defined and they have centered in the validation of different models.

However, there seems to be an agreement considering satisfaction as an evaluation of the consumption fact that varies from unfavourable to favourable. Nevertheless, some researchers focus the problem to the result obtained with the consumption of a good or service (economic vision), while others center their attention in the evaluation process (psychologic vision).

From the satisfaction point of view as a result two perspectives can be distinguised: the first one identifies satisfaction with the feeling of "being full", or the feeling of "being happy". This perspective shows an utilitarian vision in which the individual's reaction is a consequence of an information processing, valuation of the degree of fulfilment of the functions that the good or service should have. The

other perspective, which is more modern, includes a range of answer wider than the feeling of happiness; we could understand satisfaction as "surprise" and it is matched to a hedonistic vision where the human being is seen as a searcher of pleasure in the act of consumption.

With respect to satisfaction as a process two different perspectives are found, but they are linked again with the utilitarian and hedonistic visions. The first one assumes that satisfaction is a result of a cognitive processing of the information, that is, of the comparation of expectations with the return obtained. The second perspective, the hedonistic vision, proposes that satisfaction must not only be understood as a coginitive processing of information, but that the implicit affective component in the process of use or consumption is also considered fundamental. From this perspective, it is considered that during the purchasing process a series of mental phenomena linked with subjective feelings which are followed by emotions and states of mind appear. According to Hunt (1977) satisfaction is considered as an assessment of the experienced emotions.

With time it has been assumed that the process concerning satisfaction has a double side and that both cognitive and affective perspectives work together.

Traditionally, the economists have focused on the measure of satisfaction as a result or final state, considering the differences between consumers and products, avoiding psychosocial processes linked to satisfaction. However, the psychologists have paid more attention to the evaluation process (Martínez-Tur et al., 2001).

The definitions of satisfaction of economical nature show that satisfaction is a result of cost-profit analysis about a transaction (Howard and Sheth, 1969; Churchill and Surprenant, 1982). The psychological ones explain satisfaction from the desconfirmation theory. Most of researchers agree that it is a function of the discrepancy between certain standard of comparison (expectations, desires, rules based on experience, etc.) and the yield perceived with the product or service (Hunt, 1977; Oliver, 1980; Churchill and Surprenant, 1982; LaBarbera and Mazursky, 1983; Day, 1984; Woodruff, Cadotte and Jenkins; 1983, 1987; etc.). Other definitions consider that satisfaction is not only an evaluative judgement, but also a phenomenon with an strong affective component (Oliver, 1989; Mano and Oliver, 1993; Halstead, Hartman and Schmidt, 1994; Oh and Parks, 1997; Giese and Cote, 1999; Martínez, Tur, Peiró and Ramos, 2001).

3. The Consumer's Satisfaction: explanatory models

There are a lot of models developed in order to measure the consumer's satisfaction. In this section we will try to show the different approaches performed with time. For that purpose we will follow one of the possible structures that can be followed, distinguishing between cognitive and affective-cognitive models.

Cognitive models study the human being from the point of view of information processing. Under this perspective, satisfaction is understood as an evaluation of cognitive kind, that is, we start seeing the customer as a rational being who analyses the different aspects and characteristics of the product or service and evaluate them. Within this group we can distinguish the expectations confirmation model, the models based on the equity theory and the ones based on the causal attribution theory.

In the affective-cognitive models it is considered that individuals do not always behave in such a rational way, but in their decisions and evaluations take part both

utility and the experienced emotions. When taking into account these emotions more complex models arise.

3.1. Expectations Confirmation Model

The Expectations Confirmation Model Expectations Confirmation Model has dominated the literature of consumer's satisfaction from its origin in the first years of the seventies. With time it has evolved and new models around it denominated satellites have appeared.

The Expectations Confirmation Model conceives satisfaction as a result of a contrast o comparison between reality perceived by the individual and some sort of standard of comparison (expectations, rules based on experience, etc.).

As we can infer from the above paragraph, the first propositions of the model were very simple: satisfaction is linked with the degree and direction of discrepancy between expectations and profitability. Confirmation of expectations takes place when the profitability of the product or service is initially expected; negative disagreement, when profitability is lower than the one expected, taking place insatisfaction (Cardozo,1965, Howrad and Sheth, 1969) and positive disagreement, when profitability is higher than the initial expectations, causing the feeling of satisfaction.

$$\text{Satisfaction} = f(\text{discrepancy})$$

There are two methods to apply this model: the first one is called the inferred method, and it calculates the difference between the expectation of profitability and the perception of the obtained result (Yuksel and Rimmington, 1998); the second one, is called the direct method, and it measures directly the discrepancy between expectations and perceptions. In this case, the amount of the difference is determined directly by the individuals.

If the inferred method is used, the levels of expectations must be collected before the individual has consumed the product or service in order to avoid the possibility that interferences due to biases occur, although this method has also some disadvantages, such as, for example, the fact that consumers, following the social rule, affirm having high expectations by definition and it forgets the fact that those expectations can be modified during the experience of consumption. So, following this procedure, it is not possible to have access to these checked expectations (Yuksel and Rimmington, 1998). On the other hand, perceptions of profitability must be collected after the individual has been exposed to the experience of consumption and the difference between the perceived profitability and expectations are defined as discrepancy, which is the variable that explains the degree of satisfaction obtained.

With the direct method, the measure of discrepancy is performed ex-post and it is given directly by the user, that is, you do not need to calculate the difference between perceptions and expectations.

This simple model has evolved as a consequence of the critics suffered, and new more complex variants have been born, where the consumers not only evaluate the reality comparing it with their standards, but that in some way they need to adapt that reality to their own standards , arising what is called assimilation effect. On the other hand, the contrast effect will take place only in the case that discrepancy between the standards of comparison and the perceived reality overcomes a certain level of tolerance.

This second variant includes the assimilation effect and suggests the possibility that people evaluate a product or service according to their own standards of comparison and not only from the confirmation of expectations. The individual evaluates the product or service adapting the reality which is observed to his own standards. Oliver (1980) proposed what is called the additive model, where satisfaction was a function of expectations (assimilation) and discrepancy (contrast).

Satisfaction = f (Expectations, Discrepancy)

The natural evolution of the disagreement expectations model made the researchers study if the perceived profitability could have a direct relationship with satisfaction. Swan (1988) suggested that the results produced by the good or service satisfy the needs of the individuals, and Tse and Wilton (1988) and later Erevelles and Leavitt (1992) show that in the case of new goods or services, the fact of obtaining good results will make the consumer feels satisfied independently of his expectations and the experienced discrepancy.

The inclusion of the perceived profitability is associated to the research of the aptitudes in the field of social psychology. That is why this new variant is called attitudinal, while the initial disagreement model and the additive one are based on the study of expectations and their confirmation.

Satisfaction = f(Expectations, Profitability, Discrepancy)

The first study where the effects of discrepancy, expectations and perceived profitability are considered together is the one by Chruchill and Surprenant (1982). The hypothesis was that the perceived profitability could influence the satisfaction and that the importance of the relationship between these two variables depended on the kind of product analyses, distinguishing between durable and non-durable products (for now the studies had only considered non-durable products). They proposed that satisfaction with durable products depended more on the real profitability than with non-durable ones. The results of this research show that certainly the effects of expectations, disagreement and profitability on satisfaction can differ according to the durability of the products.

Some years later Tse and Wilton (1988) designed an experiment with similar characteristics to the one by Churchill and Surprenant (1982) but they considered only a durable product. The results show that the model which could better explain the satisfaction was the one considering the perceived profitability, the expectations and the discrepancy.

There are other studies in this field which have found that the direct effect of the perceived profitability improves significantly the model of the disagreement of expectations, such as Anderson and Sullivan (1993), Liljander and Strandvik (1993), Patterson (1993), Oliver (1993a), Liljander (1994), Martínez-Tur and Tordera (1995), Patterson, Jonhson and Spreng (1997) and Marzo (1999).

For the time being the standards used by the studies we have mentioned have been expectations. However, these are just one of the possibilities to evaluate the goods or services. Other studies have been developed under other standards as desires (Olhavsky and Spreng (1989), Spreng and Olhavsky (1992), Spreng and Mackoy (1996)), rules based on experience (Woodruff, Cadotte and Jenkins (1983)), sketches (Stayman et al. (1992), Martínez-Tur et al. (2001)) or real profitability.

3.2 Models based on the theory of equity

At the end of the seventies, the first studies about satisfaction considering the theory of equity appeared, and they found that equity and injustice influenced on satisfaction (Huppertz et al. (1978). However, in these initial works there were different aspects unsolved, such as the characteristics of cost and profits of the parts involved in the transaction, or the different interpretations given to equity. Finally, these questions were widely studied in the works of Oliver and Swan (1989a,b), Erevlelles and Leavitt (1992), Messick and Sentis (1983).

These studies try also to connect the confirmation of expectation models with the equity model. These authors consider that equity and discrepancy are different aspects. On the one hand, the first one considers cost-profits as standard of comparison, while the second one uses expectations. On the other hand they also differ in the nature of the results considered relevant: equity uses the term justice and discrepancy, the term profitability. Nevertheless, in spite of these differences, they complement in the forecast of the level of satisfaction. Bravo, Peiró and Rodríguez (1996) establish other difference according the standards of comparison used. While in the theory of confirmation of expectations the standards are of intrapersonal nature, in the theory of equity they have interpersonal nature, since the individual not only evaluates his relationship cost-profit, but also evaluates his relationship with the rest of individuals involved in the transaction.

3.3. Models based on the Causal Attribution Theory

The Causal Attribution Theory is based on the fact that human beings attribute causes to the mistakes and virtues they find when consuming, and these attributes can influence on satisfaction (Martínez-Tur et al. 2001)). According to Heider (1958) the causal attribution is considered a cognitive-egocentric phenomenon, that is, the explanation to a fact is due on the one hand, to the perception of the reality by the individual (cognitive process or logic explanation) and on the other hand, to the protection of self-esteem (motivational process or distortion of reality). In fact, the author distinguishes between attributions to internal causes (from the individual) and attributions due to environmental or external causes (related to the environment). This classification was later improved by Weiner (1985), who distinguishes three dimensions in the causes of successes or mistakes in the process of exchange: “causality or control” (Who is the responsible?), “stability” (Can it possibly happen again?), “control”(has the responsible control over the cause?”). See Bitner (1990), Schommer and Wiederholt (1994), Tse (1990), Srivastava (1992), Oliver and DeSarbo (1988), and Hocutt et al. (1997).

3.4. Affective-Cognitive Models

The attention to emotions and their influence on satisfaction judgements has extended in the decade of nineties.

The conception of satisfaction as an emotion has been developed by Oliver (1981) showing that satisfaction is the result of a cognitive process, but establishing that this cognitive process is just one of the determinants of satisfaction, associating it to different emotions.

This kind of models try to complement the other ones including a new explicative variable: affect[1], supposing that while the consumption is taking place,

[1] Affect is a generic and unspecific phenomenon that includes many aspects such as evaluations, preferences, state of mind not linked to a concrete object, and emotions (Fernández Dols, 1994).

different feelings appear and they alter the judgements of satisfaction. This implies that cognitive and emotional systems are not independent, but they are linked in the explaniton of satisfactions. Some of the studies considering this fact are Westbrook (1980a; 1987), Westbrook and Oliver (1991), Oliver (1993a), Mano and Oliver (1993), Oliver (1994) and Oliver, Rust and Varki (1997).

In the above works emotions are considered after the individual has processed informations. We have already mentioned that affect was explained through perception of profitability and level of activation (which it is affected directly by profitability). Although cognitive is in some way above affective, there are situations where the information processing can not be developed deeply (due to the lack of experience or due to the nature of the good or service). In those situations the emotional experience has a great relevance in the explanation of the process carrying out satisfaction. This idea has been previously suggested by Zeithaml (1988) showing that affective predominates in the context of services and non-durable goods, while cognitive predominates in the context of industrial an durable goods. Other studies are Arnould and Price (1993), Jayanti (1995) and Alford and Sherrell (1998).

4. Analysis of Satisfaction of the Turist Visiting Tenerife: an Explicative Model

The theoretical framework outlines as variables explaining the tourist's level of satisfaction his motivations, his expectations over every factor in which he feels identified and the level of perceptions that the tourist observes when the activity of leisure is taking place. The problem is that these three sets of variables have a temporal character, since motivations appear in the first place, these carry out a set of possible alternatives, deciding between one of them according the expectations suggested by every alternative. Later the service is consumed and the perceptions of every factor defining the service are observed. The measure of the global satisfaction is a process that includes all the period including what can be called period of settlement, which is a period after the consumption of the tourist activity (Sometimes when one ends a tourist travel is unsatisfied, but later, when coming back home and analyses his stay, reconsiders his global valuation. This situation is very usual when the tourist has some problem at the end of his trip.

Obviously if we wanted to consider all the information, one should observe every identified variable when it takes place, since other way the individuals are going to alter their answers. Moreover, variables like expectations change their valuation according first, to the information available to the tourist, and second, to the interaction of the tourist with other tourists when the activity of leisure is taking place.

We can conclude that if our aim is analysing the level of satisfaction of a tourist destination, we should measure the tourists' global level of satisfaction after consuming the tourist product and after the period of settlement of their perceptions. This is difficult to obtain for the manager of the tourist destination since at that time the tourist is much less accessible since he is already in his home country. Nevertheless, if he manager is interested in identifying the factors determining the satisfaction of a tourist with the tourist destination, it is necessary to measure all the variables (desires, motivations, expectations and perceptions) and their changes through the time, from the moment where the desires appear to the moment when a stable value for the satisfaction

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Following this author, emotions are a way of affect which imply cognitive reactions which are associated to reactions with defined characteristics that carry actions and can be identified by the language through the names of the emotions.

is reached. Obviously the cost of this study can widely overcome the available resources for that purpose.

The above exposition is clearly maximalist and it is subject to important theoretical lags, mainly in the framework of the relationships between the variables, which can invalidate the data which could be collected. In this sense, the analysis that can be done in the present paper with the available information, the Survey of satisfaction by the Interisland Town Hall of Tenerife, has essentially a a descriptive and exploratory character. This approach has been performed to analyse the expectations and perceptions at the level of factor in order to study their relationship with a measure that represents tourists' visiting Tenerife for leisure purposes global satisfaction.

When studying this survey we find four problems. First, motivations are only measured in 1996 and 1997. Secondly, perceptions and expectations are measured in different surveys. The first ones are measured when the tourist arrives at Tenerife, and the second ones when he is leaving the island. Thirdly, there are a few individuals that answer all the factors defining expectations and perceptions. Finally, the tourist's global level of satisfaction is not measured directly.

We will briefly describe the way how information has been collected and we will show solutions to solve the above problems.

In 1996 the Interisland Town Hall of Tenerife decides to include an interesting novelty in the survey of incoming tourism applied since years. For that moment, the surveys had been filled in the airports at the moment when the tourists finished their vacations. However, since July 1996, the surveys were also collected by the time they arrived with the intention of, according to the Counseler of Tourism and Landscapes, knowing the motivations and expectations of the tourists visiting Tenerife.

The incoming survey, was initially structured in three parts: motivations, expectations and basic data. From July 1999 the survey is significantly modified, avoiding questions about motivations, due to that, according to the Interisland Town Hall analysts', the scarce relevance of the information obtained, so the number of questions is reduced to basic data. As a consequence, in practice, these variables can not be used in the models of satisfaction with destination. The immediate consequence of these changes supposed a greater participation of tourists who found an understandable text and quick and easy to fill in.

The part corresponding to basic data includes questions about the home country, their age, income, kind of booking, number of previous visits, length and place of stay, and finally, media used in the process of selection of Tenerife as tourist destination.

As regards to expectations, at the beginning of the trip, the survey has twenty four factors and tourists must establish their importance so that vacations are satisfactory. Each factor is punctuated from 1 (no importance) to 100 (maximum importance) through a scale of Likert . All the variables have been present in the survey from the beginning except "new human relationships", which disappeared in June 1999, and "bathing, swimming in the sea", which was introduced in January 2001.

In the outgoing survey, which is filled in the airports when the tourists are leaving, not only the basic data are collected (which are the same that the ones in the incoming survey), but also a set of perceptions of tourist factors. Each factor is punctuated from one (unsatisfactory) to 100 (very satisfactory) through a scale of Likert.

In order to build a model that explains the tourists' level of satisfaction both the valuations of perceptions of the attributes considered (outgoings) and the expectations of each one of them (incomings). The calculation of this last measure would have no problem if the individuals of both surveys were the same, but this is not the case. This

implies the need of statistical inference that allow estimate the punctuation of expectations and the different attributes for every one of the individuals of the outgoing survey from the data of expectations obtained in the incoming survey.

The value corresponding the standard deviations show a high degree of variability in the importance that the tourists give to each of the factors considered. This makes the media value loose significance these values can not be assigned to the factors corresponding to the outgoing survey. To solve this problem and to be able to assign every individual in the outgoing survey a punctuation of every factor expectation, a deeper analysis about the behaviour of the variables in the incoming survey must be performed.

This kind of study has been developed through a variance analysis, with the intention to study if the behaviour of the expectations can be consider homogeneous or on the contrary, heterogeneous, what would force to divide the sample into different subsamples with a similar behaviour inside them and different one between them.

The factors used to develop this work are: year of visit, country of residence, age, income level, media used to select Tenerife as a destination, place of stay in Tenerife, and way of hiring the accommodation.

The following step in the development of the research is sellecting in the outgoing survey those individuals who coincide with the socioeconomic characteristics of the individuals in the incoming survey, and assigning to them the average value of expectations for every variable corresponding to the group where they are included[2].

Once the outgoing sample has for every individual the data corresponding to average expectations (estimated) and perceptions (real), apart from the classification data which have already been mentioned, we can try to model the global satisfaction. Now we find the fourth problem we mentioned at the beginning of the section, which is that there is no question about the level of satisfaction in the destination. In order to solve this inconvenient we have considered a proxy which appears in the outgoing survey: “your next destination (seven or more days) will be spent in:

1. The same place in Tenerife that this year
2. Another place in Tenerife
3. Another Canary island
4. Another place in Spain, not in the Canary islands
5. Another place in the Mediterranean coast, out of Spain
6. Another European destination, excluding the Mediterranean coast
7. Another American, Asian or African country
8. I do not know
9. I do not know, but I do not feel like coming back to Tenerife

This question has been selected as a proxy to estimate global satisfaction since its extreme values can be identified, having the lower values certain level of satisfaction, while the value 9 has a high level of dissatisfaction. When a person says that he does not know which brand he is going to consume but he affirms that he is not going to consume the brand A, he is showing a very high level of global dissatisfaction about brand A. On the other hand, the fact of considering consuming once again that same brand A, shows that he is in some way, satisfied. The interpretation in terms of satisfaction of the central value that can show the previous question is mucho more

[2] In order to assign the average value obtained in the groups of the incoming sample to the groups of the outgoing one, previously we needed to recode the punctuations of expectations so that both scale coincide.

doubtful , so for just an exploratory purpose, we decided to select just those individuals who answered options 1,2,3, and 9. From this subsample a dummy variable (satisto3) was created, being 0 is the individual answered option 9 and 1 otherwise. This means that the new variable represents a glogal dissatisfied tourist when it has value 0 and a satisfied one when it has value 1.

In order to explore which may be the factors that determine whether a tourist is satisfied with his vacation in Tenerife, a logit model was estimated, where the dependent variable is satisto3 and the independent variables are both the expectations and the perceptions (landscape, prices, swimming pool, safety, sun, beaches, quality, accommodation, purchases, food, relax, temperature, manner, aesthetics).

At first, what is expected is that the higher level of expectations, the lower probability of being satisfied, since that would show that the tourist is stricter. On the contrary, the expected sign of expectations is positive, showing that the higher the perception of the factor, the higher level of satisfaction. Another way of introducing the factors in the model is through the variable discrepancy, defined as the difference between expectations and perceptions. However, this alternative doe not add new information due to the way how it is calculated. Thus, different logit models explaining satisto3 in function only of expectations and perceptions together. The results obtained were not congruent with the expected signs, nevertheless, the variance analysis performed to each factor distinguishing every option of satisto3 revealed the consistency of every factor, what made us think that we had a problem of approximate multicolineality. In order to solve this problem we decided to orthogonalise the set of expectations, perceptions and both together. For that purpose, and for every case, an analysis of principal components with varimax rotation was done, forcing keeping as many orthogonal factors as variables with the intention of not loosing any information.

The results obtained with the logit models have been the following:

a. Logit model explaining satisto3 in function of the factors of orthogonal perceptions. In this case, every orthogonal factor represents almost exclusively every original factor of perceptions. Concretely, the correlations matrix between the final factors and the initial ones represents a principal diagonal with values which are always higher than 0.86, and the rest of elements of the matrix have correlations higher than 0.4 Table 4.1 shows the results of the classification and goodness of fit of the model. The break point is 0.85 since that is the sample percentage for values 0 and 1 for the variable satisto3.

Tabla 4.1: Clasificación y ajuste del logit de satisto3 con percepciones ortogonales

Tabla de clasificación (a)

Observado			Pronosticado		
			SATISTO3		Porcentaje correcto
			.00	1.00	
Paso 1	SATISTO3	.00	574	297	65.9
		1.00	1318	3637	73.4
	Porcentaje global				72.3

a El valor de corte es .850

Resumen de los modelos

Paso	-2 log de la verosimilitud	R cuadrado de Cox y Snell	R cuadrado de Nagelkerke
1	4207.607	.114	.201

Tabla 4.2: Logit de satisto3 en función de percepciones ortogonales

Original	Ortogonal	B	E.T.	Wald	gl	Sig.	Exp(B)
PAISAJE	FAC1_3	.171	.037	21.342	1	.000	1.186
PRECIOS	FAC2_3	.318	.037	72.278	1	.000	1.375
PISCINA	FAC3_3	.096	.036	7.026	1	.008	1.101
SEGURID	FAC4_3	.062	.036	3.030	1	.082	1.064
SOL	FAC5_3	.222	.039	31.974	1	.000	1.249
PLAYAS	FAC6_3	.397	.039	105.622	1	.000	1.488
CALIDAD	FAC7_3	.156	.037	18.091	1	.000	1.169
ALOJAM2	FAC8_3	.142	.035	16.363	1	.000	1.152
COMPRAS	FAC9_3	.270	.037	53.628	1	.000	1.309
COMIDA	FAC10_3	.421	.036	138.461	1	.000	1.524
RELAX	FAC11_3	.271	.034	62.426	1	.000	1.311
TEMPERA	FAC12_3	.069	.036	3.565	1	.059	1.071
TRATO	FAC13_3	.229	.035	42.184	1	.000	1.257
ESTETIC	FAC14_3	.245	.036	45.762	1	.000	1.278
	Constante	1.865	.043	1902.508	1	.000	6.455

Moreover, as can be seen in table 4.2, all the factors are statistically significant at 10%, and show positive sign. That is, the higher the level of perceptions, the higher probability of feeling globally satisfied.

Numerically, the greater effects over the probability of feeling satisfied are related with perception of a high quality in food, beaches and the existence of low prices.

b. Logit model explaining satisto3 in function of the factors of orthogonal expectations. The values obtained for the orthogonal expectations differ in terms of interpretation, from the ones obtained for the case of perceptions. In this case, the interviewed have a greater difficulty to difference some of the factors. The consequence is that the factors of original expectations show a higher multicolineality which produces orthogonal expectations that combine diverse original expectations. This way,

the expectations about the number of hours of sun are combined with expectations about temperature to calculate a unique factor. In the second place, the variables FPRECIO and FCALIDAD are not represented by a unique orthogonal factor, but their information is shared between several final factors. As a consequence of these groups, the last three factors do not have any capacity of interpretations in terms of global satisfaction.

Tabla 4.3: Clasificación y ajuste del logit de satisto3 con expectativas ortogonales

Tabla de clasificación(a)

Observado			Pronosticado satisto3 .00	Pronosticado satisto3 1.00	Porcentaje correcto
Paso 1	satisto3	.00	533	338	61.2
		1.00	1407	3548	71.6
	Porcentaje global				70.0

a El valor de corte es .850

Resumen de los modelos

Paso	-2 log de la verosimilitud	R cuadrado de Cox y Snell	R cuadrado de Nagelkerke
1	4435.145(a)	.079	.139

Tabla 4.4: Logit de satisto3 en función de expectativas ortogonales

		B	E.T.	Wald	gl	Sig.	Exp(B)
HORSOL, TEMPERA	fac1_4	.564	.037	230.112	1	.000	1.758
SEGURID, PRECIOS	fac2_4	.041	.042	.957	1	.328	1.041
PRECIOS, COMPRAS	fac3_4	.236	.040	34.399	1	.000	1.267
TRATO	fac4_4	-.020	.037	.283	1	.595	.981
PISC	fac5_4	-.039	.040	.957	1	.328	.962
PLAYAS	fac6_4	-.421	.042	100.738	1	.000	.656
ESTETIC	fac7_4	.072	.035	4.186	1	.041	1.074
RELAX	fac8_4	.215	.031	48.431	1	.000	1.240
ALOJAMI	fac9_4	.126	.038	11.129	1	.001	1.134
COMIDA	fac10_4	-.029	.035	.659	1	.417	.972
PAISAJ2	fac11_4	-.060	.040	2.247	1	.134	.941
Sin interpretación	fac12_4	-.202	.036	31.587	1	.000	.817
Sin interpretación	fac13_4	-.068	.037	3.405	1	.065	.934
Sin interpretación	fac14_4	-.026	.040	.434	1	.510	.974
	Constante	1.756	.041	1802.502	1	.000	5.791

The results in terms of classification and fit are shown in table 4.3 and the estimation can be seen in table 4.4. The results in this case are worse than in case a and they are sometimes inconsistent with the expected signs. Since the variables of expectations have been generated in this study, the conclusions from these results are not clear. Anyway, we could say that the results may indicate that what is really significant when defining whether a tourist is satisfied or not with his vacations, are perceptions, more than expectations.

c. Logit model explaining satisto3 in function of the factors of orthogonal expectations and perceptions. With this model we pretend to consider the additional

information that expectations may have with respect to perceptions. For that purpose the orthogonal factors are obtained from a principal component analysis with varimax rotation, which was developed together with the 14 variables of perceptions and the other 14 variables of expectations. From the 28 orthogonal factors, six are not identified with any original variable. Besides, all the variables of perceptions are uniquely correlated with one of the orthogonal factors (with values higher than 0.87). However, the expectation variables are gathered in order to build some of the factors. This vay, ESTETIC, SEGURID, CALIDAD and COMIDA, all of them expectations, constitute the first factor. The second orthogonal factor is made up by HORSOL, TEMPERA and PAISAJ2, having the last one negative sign. The expectations about prices and purchases are gathered to constitute the third factor. The rest of variables belong to a unique factor which can be seen in table 4.5. With these orthogonal factors the logit model is estimated considering satisto3 as the endogenous variable. The capacity of classification and the level of fit of the model is shown in table 4.5. while the estimated model can be seen in table 4.6.

Tabla 4.5: Clasificación y ajuste del logit de satisto3 con expectativas y percepciones ortogonales

Tabla de clasificación(a)

	Observado		Pronosticado		
			satisto3		Porcentaje correcto
			.00	1.00	
Paso 1	satisto3	.00	648	223	74.4
		1.00	1214	3741	75.5
	Porcentaje global				75.3

a El valor de corte es .850

Resumen de los modelos

Paso	-2 log de la verosimilitud	R cuadrado de Cox y Snell	R cuadrado de Nagelkerke
1	3835.170(a)	.169	.297

By comparing these results with the previous ones, in sections a and b, we can see that the last ones are significantly better, overcoming the 75% of the right classification and obtaining a R^2 of Nagelkerke near 0.3. However, the results of the estimation are not congruent with the expected signs, due to the expectation variables, being this result congruent with the one obtained in section b.

Tabla 4.6: Logit de satisto3 en función de expectativas y percepciones ortogonales
Variables en la ecuación

		B	E.T.	Wald	gl	Sig.	Exp(B)
FESTETIC, FSEGURIDAD, FCALIDAD Y FCOMIDA	FAC1_6	.110	.041	7.412	1	.006	1.117
FHORSOL, FTEMPERA y FPAISAJ2 (negativo)	FAC2_6	.565	.042	180.088	1	.000	1.759
FCOMPRAS Y FPRECIO	FAC3_6	.179	.044	16.375	1	.000	1.196
STEMPERA	FAC4_6	.146	.037	15.300	1	.000	1.157
FRELAX	FAC5_6	.232	.034	47.601	1	.000	1.262
FPLAYAS	FAC6_6	-.424	.045	88.873	1	.000	.655
FPISC	FAC7_6	-.188	.045	17.777	1	.000	.829
SPISCINA	FAC8_6	.114	.037	9.271	1	.002	1.121
SSEGURIDAD	FAC9_6	.102	.037	7.695	1	.006	1.107
SPLAYAS	FAC10_6	.391	.040	93.263	1	.000	1.478
FTRATO	FAC11_6	-.013	.039	.102	1	.749	.987
SPRECIOS	FAC12_6	.268	.038	48.911	1	.000	1.308
SPAISAJE	FAC13_6	.248	.038	41.730	1	.000	1.281
FALOJAMI	FAC14_6	.157	.040	15.535	1	.000	1.171
SCALIDAD	FAC15_6	.216	.038	32.152	1	.000	1.241
SCOMPRAS	FAC16_6	.272	.038	50.553	1	.000	1.313
SALIJAM2	FAC17_6	.127	.036	12.146	1	.000	1.136
SRELAX	FAC18_6	.319	.036	79.731	1	.000	1.376
SCOMIDA	FAC19_6	.398	.037	115.033	1	.000	1.489
STRATO	FAC20_6	.280	.036	59.770	1	.000	1.323
SESTETIC	FAC21_6	.282	.038	56.238	1	.000	1.325
SSOL	FAC22_6	.090	.041	4.871	1	.027	1.094
Sin identificar	FAC23_6	-.039	.037	1.139	1	.286	.962
Sin identificar	FAC24_6	-.018	.043	.178	1	.673	.982
Sin identificar	FAC25_6	-.030	.045	.435	1	.509	.971
Sin identificar	FAC26_6	-.247	.039	39.966	1	.000	.781
Sin identificar	FAC27_6	.003	.040	.006	1	.937	1.003
Sin identificar	FAC28_6	-.048	.040	1.460	1	.227	.953
	Constante	1.934	.048	1598.878	1	.000	6.919

d. Logit model explaining satisto3 in function of the orthogonal discrepancy factors. This is an alternative model to the one shown in section c, since both the expectations and perceptions are considered, but in this case through a variable difference which represents the discrepancy or the distance between both measured as the difference between expectations and perceptions. In this case, it is expected that all the estimated parameters have negative sign, since that would show that the probability of feeling unsatisfied is higher when the discrepancy variable is negative, that is, when perceptions overcome expectations. Table 4.7. show the fit measures which, as can be seen, are very similar to those obtained just with perceptions.

Tabla 4.7: Clasificación y ajuste del logit de satisto3 con discrepancias ortogonales

Tabla de clasificación(a)

Observado			Pronosticado		
			SATISTO3		Porcentaje correcto
			.00	1.00	
Paso 1	SATISTO3	.00	564	307	64.8
		1.00	1340	3615	73.0
	Porcentaje global				71.7

a El valor de corte es .850

Resumen de los modelos

Paso	-2 log de la verosimilitud	R cuadrado de Cox y Snell	R cuadrado de Nagelkerke
1	4201.121	.115	.202

In table 4.8. are shown the results of the estimation of satisto3 with the orthogonal factors of discrepancies. In this same table we can see that each factor represents almost exclusively each of the variables of discrepancy, showing correlations always higher than 0.88.

Tabla 4.8: Variables en la ecuación

		B	E.T.	Wald	gl	Sig.	Exp(B)
SOL	FAC1_5	.033	.042	.613	1	.434	1.033
PRECIOS	FAC2_5	-.321	.037	73.254	1	.000	.726
PAISAJE	FAC3_5	-.237	.036	43.247	1	.000	.789
SEGURID	FAC4_5	-.025	.037	.487	1	.485	.975
PISC	FAC5_5	-.133	.036	13.468	1	.000	.876
PLAYAS	FAC6_5	-.481	.039	155.374	1	.000	.618
ALOJAM2	FAC7_5	-.110	.035	9.666	1	.002	.896
CALIDAD	FAC8_5	-.144	.037	15.509	1	.000	.866
COMPRAS	FAC9_5	-.266	.037	52.894	1	.000	.766
COMIDA	FAC10_5	-.410	.036	130.858	1	.000	.664
RELAX	FAC11_5	-.258	.034	57.101	1	.000	.772
TRATO	FAC12_5	-.243	.035	47.514	1	.000	.785
TEMPERA	FAC13_5	-.100	.037	7.273	1	.007	.905
ESTETIC	FAC14_5	-.197	.036	29.427	1	.000	.822
	Constante	1.884	.043	1897.215	1	.000	6.577

All the statistically significant parameters estimated show the expected signs and the discrepancies in the variable hours of sun and safety do not have statistical effect on satisfaction. Taking into account the restrictions imposed by working with orthogonal factors, table X8 show that the discrepancies with greater effect on the tourist's satisfaction are quality of beaches, food and prices, corroborating the results obtained in case a.

5. Conclusions

From the results obtained in the different estimations of the models used to explain which factors determine the probability of being satisfied with destination, we can say that the perceptions over attributes of a tourist product are the most determinant elements when a tourist is satisfied or not. On the other hand, expectations are also significant, but the tourist finds more difficulty when valuating these variables independently. It is also certain that this result can be induced by the way how the expectation variables have been built. With respect to this, we must remind that they are the average observed expectations from some tourists previous knowing their destination, which are transferred to other tourists who have already consumed the service and who are in the airport going back home.

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