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Consumer complaint behavior in telecommunications: The case of mobile phone users in Spain

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ABSTRACT

This work analyzes the post-purchase behavior of mobile phone users once they have experienced a service failure. Taking into account the existing literature on Consumer Complaint Behavior (CCB), a survey for 4249 individuals in Spain is used for specifying econometric equations explaining the determinants of the complaining decision and the impact of a proper management of complaints on overall satisfaction.

The results suggest that dissatisfaction is not a necessary condition for complaining and that the propensity to complain is different depending on the type of problem experienced by the customer.

Another relevant finding of this study is that a good handling of complaints by the company may constitute a source of improvement in the overall user satisfaction and profitability of the firm. This result is of great interest for its implications when designing the marketing strategy of companies. Accordingly it seems reasonable to use the complaint management as a powerful tool to retain customers.

Keywords: *Consumer Complaint Behavior, Mobile phones, Consumer Retention, Consumer Satisfaction Consumer Loyalty, Voice, Exit, Service Failure, Complainers.*

1. INTRODUCTION

In the increasingly competitive telecommunications market, firms pay attention to maintaining a loyal customer base. Loyal customers often cost less to service, spend more the longer their time with the company and provide a good source for new business. On the other hand, customer dissatisfaction diminishes the base and erodes the firm's reputation. Consumer dissatisfaction is a very serious problem in the case of service industries with a large and negative impact on profitability (Reichheld & Sasser, 1990).

Obviously, customer retention (or the degree of loyalty of the consumer to the company) will be greater the higher the level of consumer satisfaction. In that sense, there exist quite a number of published papers (Bowen & Chen, 2001; Dube & Maute, 1996; Garbarino & Johnson, 1999) showing the relationship between customer satisfaction and loyalty to the company. Thus, according to that literature, the goal of the company should be to get the greatest satisfaction possible trying to avoid any service failure. But, in the real world service failures are almost unavoidable and, therefore, it is important to learn how to manage them to try to get a second chance from the customer.

There exist a whole area of research, the consumer complaint behavior (CCB), which deals with the identification and analysis of all aspects involved in the consumer reaction to a product or a service failure and the consequent perceived dissatisfaction.

The aim of this work is to contribute to a better understanding of post-purchase behavior of telecommunications consumers in Spain. Specifically, assuming that failures will happen, we want to know how the consumer reacts.

The theory of exit, voice and loyalty, proposed by Hirschman (1970), is one of the first to conceptualize customer complaint responses. According to Hirschman's theory, some customers react to the dissatisfaction passively, preferring to remain with the firm. These loyal dissatisfied customers choose to remain in the belief that the costs of searching for another supplier outweigh the likelihood of an improvement. The other two possibilities for the dissatisfied customers are: voice a complaint (to the seller or to a third party) and exit, which means switching the seller or terminating the relationship.

Of these three options (loyalty, voice or exit), in this paper, the focus is knowing the reasons that lead an individual to become a complainer (voice). The interest derives from the fact (proved by previous research) that complaints have a direct impact on the defection intention by the customer. Arnould, Price, and Zinkhan (2004) pointed out that dissatisfied customers who do not

complain are more likely to discontinue purchasing, which means, that they are more likely to defect than those who complain. In other words, the majority of complaining customers will continue to buy the product or service, compared to those who are dissatisfied but do not bother to complain (Sheth, Jagdish, Mittal, & Newman, 1999). So if the interest of the operators is to avoid customers leaving the company, it is essential to get a second opportunity for the company promoting the customer complaints and dealing with them appropriately.

Although there is abundant literature on the subject, there are few studies addressing the particular case of telecommunications consumers (Nimako & Mensah, 2012; Nimako, 2012). This paper attempts to contribute to fill that void. The focus on telecommunications consumers makes sense because, as stated by previous research, post-purchase consumer behavior is different depending on the characteristics of the product or service involved¹ (Best & Andreasen, 1977; Day & Landon, 1977). And, of course, also the structure of the relevant market has an impact on post-purchase consumer behavior (Andreasen, 1985; Singh, 1991; Hirschman, 1970). Obviously, when there is a lower level of competition in the sector, the most likely reaction to service failure is staying silently loyal. In these cases voice can have limited effect and, consequently, the likelihood of complaining is small.

The organization of the rest of the paper is as follows. Section 2 will be devoted to the data: sources and descriptive analysis of the dataset. Section 3 analyzes the individuals perceiving unpleasant experiences with the service and their common characteristics. Section 4 presents the factors determining the probability that an individual who has had problems with the service becomes a complainer. Then section 5, assuming that the individual has decided to complain, studies how he decides to whom (directly to the company, government agencies, consumer organizations, etc.). Section 6 analyzes the potential impact of satisfaction with the handling of complaints on the overall satisfaction with the service of the user. Finally, in section 7, the conclusions of the study and the main policy implications are presented.

2. DATA ANALYSIS

To carry out the research the information from the survey by the Center for Sociological Research of Spain (CIS, 2009) "Satisfaction of users of telecommunications services" is used. This is a national survey that is conducted in 2009 through personal interviews to the resident population of both sexes aged 18 or older. In that sample there are 4249 individuals who have contracted mobile phone services for personal use. From that sample, the individuals who report having had at least one problem with the service over the last twelve months are selected. To do this,

¹ Consumers seem to experience a greater propensity to complain about services than about products. It also appears to be particularly significant how essential the product or service is for everyday life.

individuals are asked whether they have experienced any of these problems during the period: delay for the service, coverage problems, incorrect billing, improper charging, breach of contract, trouble unsubscribing the service, difficulty in obtaining information, or any other problem. As a result, the study focuses on a subsample of 1211 individuals. Figure 1 synthesizes the content of the sample and the different steps in the post-purchase decision tree.

Figure 1. Distribution of mobile-phone users and phases in their decision tree after experiencing problems

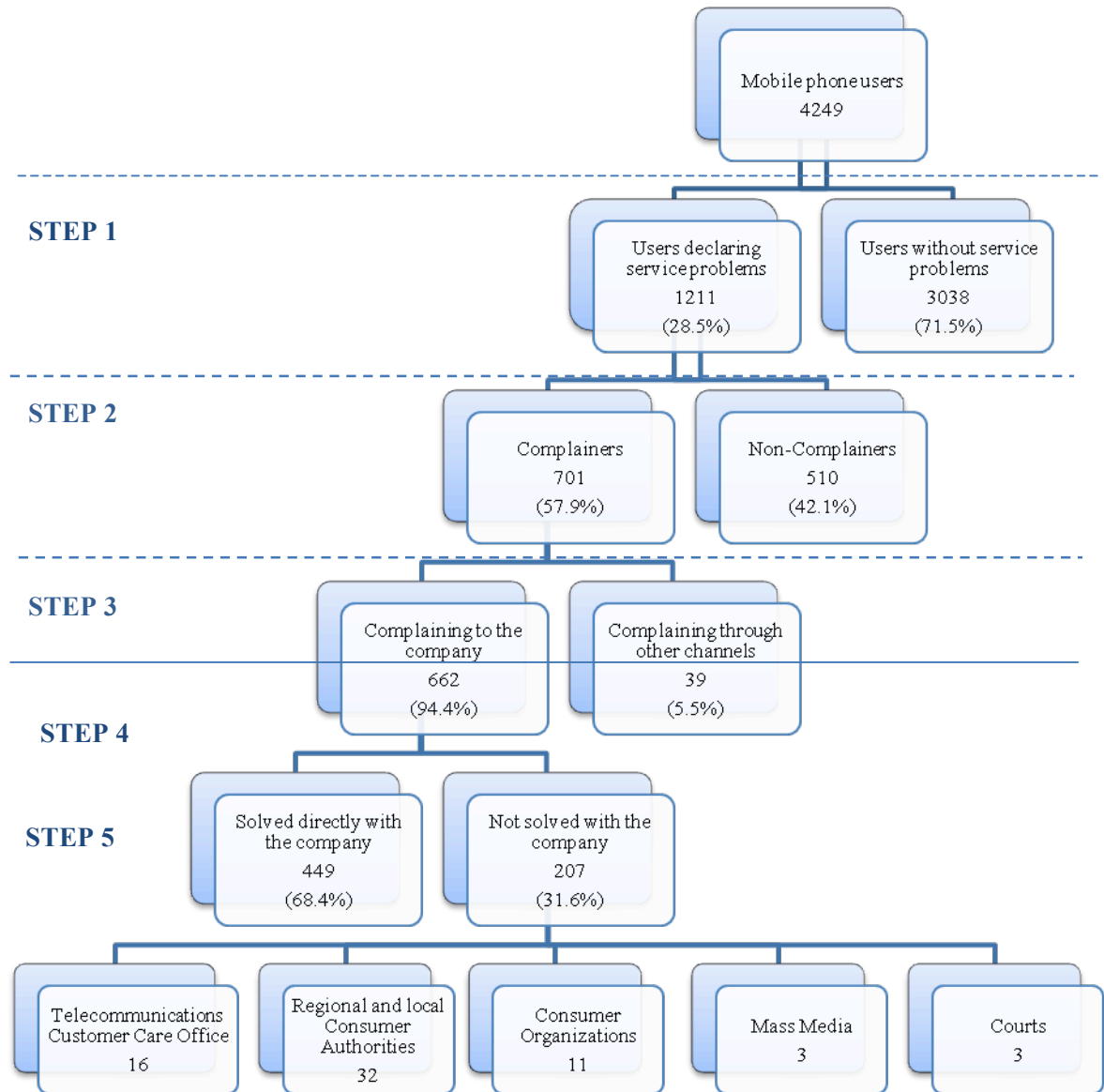


Table 1 shows the characteristics of the individuals in the sample. First three categories of users are presented in the table: all mobile phone users, users who report having had at least one problem with the service and users who have made the decision to complain.

Particularly interesting is to show the profile of the group of individuals who have declared at least one problem with the service because this group will be the starting point for the study of the decision to complain. As shown in table 1, there is a balanced composition of users by gender and predominates the group of users aged 30-44 years, with an intermediate level of education and a low level of monthly expenditure (20€ or less). Moreover, most of them are linked to the three major operators (Movistar, Vodafone and Orange) which at that time served 85 percent of the market.

However, it is also very illustrative the comparison between the profiles of the three user groups considered. As an example, it can be seen that in the whole sample of mobile users, the gender proportion is almost identical but it increases in favor of males as we consider the group of individuals who report problems (52.8%) or the group of complainers (55.8%).

Table 1. Sample profile of individuals

Characteristics	Categories	All mobile phone users (4249)		Users declaring at least one problem (1211)		Complainers (701)	
		Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Gender	Male	2142	50.4	640	52.8	391	55.8
	Female	2107	49.6	571	47.2	310	44.2
Age	18-29	939	22.1	325	26.8	205	29.2
	30-44	1486	35.0	489	40.4	286	40.8
	45-64	1269	29.9	322	26.6	185	26.4
	65-99	555	13.1	75	6.2	25	3.6
Education	Primary	874	20.6	172	14.2	88	12.6
	High School	1352	31.8	415	34.3	245	35.0
	College	1422	33.5	446	36.8	264	37.7
	University	471	11.1	161	13.3	96	13.7
	DN / NA	130	3.1	17	1.4	8	1.1
Expenditure (€/month)	2-20	1107	26.1	397	32.8	207	29.5
	21-40	1166	27.4	365	30.1	228	32.5
	41-60	516	12.1	190	15.7	117	16.7
	61-630	469	11.0	177	14.6	115	16.4
	DN / NA	991	23.3	82	6.8	34	4.9
Operator	Movistar	2063	48.6	517	42.7	312	44.5
	Vodafone	1276	30.0	375	31.0	209	29.8
	Orange	786	18.5	284	23.5	162	23.1
	Yoigo	71	1.7	15	1.2	8	1.1
	Others: VMOs	53	1.2	15	1.2	10	1.4

According to the dataset, within the 1211 individuals declaring at least one problem with the service, 701 become complainers. That is, there is an average propensity to complain when experiencing a problem of 57.9 percent. However, not all types of problems have the same probability of generating a complaint. As shown in table 2, the propensity to complain ranges from a low 28.5 percent for coverage problems to a maximum of 94.6 percent for incorrect

billing. The differences found between the type of problem and the response from the consumer would be corroborating previous studies such as Best and Andreasen (1976) and Levesque and McDougall (1996). According to those studies, obvious problems (such as billing errors and failures to meet deadlines) usually present clear evidence on which both the customer and the supplier can agree. In contrast, judgmental problems entail a potential difference of opinion between supplier and customer, and the customer may anticipate having to spend significant effort proving that a problem has occurred. This additional effort discourages complaints.

Table 2. Propensity to complain according to type of problem with the service

Base: 743 individuals who reported having only one incidence							
	Delay for the service	Coverage problems	Incorrect billing	Improper charging	Breach of contract	Difficulty unsubscribing the service	Difficulty in obtaining information
N. users	9	536	37	34	27	13	73
N. complainers	8	153	35	31	23	12	63
Percentage of complainers	88.9%	28.5%	94.6%	91.2%	85.2%	92.3%	86.3%

Another issue explored is the relationship between levels of overall user satisfaction² and the decision to complain. As can be seen in table 3, the first point that is worth noting is that the average value of overall satisfaction is not very different when it is considered all users of mobile (7.18) or only those who have problems (6.45) and, within these, there is not much difference between the degree of satisfaction of complainers (6.24) and non-complainers (7.36). All this would suggest that in general dissatisfaction is not a necessary condition to become a complainer.

² Overall user satisfaction is measured on a ten point Likert scale ranging from 1= very dissatisfied to 10= very satisfied.

Table 3. Overall satisfaction levels of mobile phone users

Overall Satisfaction	All mobile phone users	Users declaring at least one problem	Non-Complainers: users declaring at least one problem		Complainers: users declaring at least one problem	
	Number	Number	Number	% over users with problems	Number	% over users with problems
1	54	42	6	14.3	36	85.7
2	27	17	5	29.4	12	70.6
3	53	28	7	25.0	21	75.0
4	107	63	18	28.6	45	71.4
5	458	218	89	40.8	129	59.2
6	608	202	105	52.0	97	48.0
7	880	237	98	41.4	139	58.6
8	1140	241	108	44.8	133	55.2
9	427	88	41	46.6	47	53.4
10	423	65	31	47.7	34	52.3
Total number of individuals	4177	1201	508	---	693	---
Average level of satisfaction	7.18	6.45	7.36	---	6.24	---

In the above table 3 we observe that complaining behavior is more prevalent among dissatisfied customers than satisfied ones. However, even in the case of individuals with very high levels of satisfaction (9 or 10) there is a significant percentage (52.3 percent) who decide to complain when they experience a problem, as seen at the bottom of the last column.

With respect to the subsequent decisions of the consumers, our data indicates that most of the complainers (94 percent) make their complaints to the service provider. And providers by themselves solve 68 percent of the claims at the satisfaction of the customer. The values presented above are relative to the whole set of operators however, with our data, it is concluded that there are no significant differences between them.

The survey also reflects the degree of user satisfaction with the outcome of the complaint. Satisfaction in this case is measured with four values on a scale ranging from 1 (very satisfied) to 4 (completely dissatisfied). Considering only individuals who have managed to resolve their claims with the company, table 4 shows satisfaction levels disaggregated by operators. In general, it appears that there exists a high margin of improvement regardless of the operator considered. In fact, even in the best cases (Vodafone and Orange), the users consider only 54.4 percent of complaints resolved in a "very satisfactory" or "satisfactory" manner (it was decided to exclude from the comparison operators Yoigo and VMOs because of scarcity of data).

Table 4. Level of satisfaction with complains handling

Operators	Very Satisfied	Satisfied	Moderately dissatisfied	Completely dissatisfied	Total	Percentage of users satisfied or very satisfied
MOVISTAR	5	107	69	47	228	49.1%
VODAFONE	11	76	44	29	160	54.4%
ORANGE	6	56	36	16	114	54.4%
YOIGO	1	4	2	0	7	71.4%
VMO	0	3	1	3	7	42.9%
TOTAL	23	246	152	95	516	52.1%

3. UNPLEASANT EXPERIENCES AND ITS POTENTIALLY EXPLANATORY FACTORS

Following the order reflected in figure 1, the first step of this work will try to establish the quantity of consumers reporting problems with the service and, at the same time, tray to find whether there are some regularities among them.

As reflected in figure 1, according to the CIS dataset of 2009, from a sample of 4249 users of mobile services, 28.5 percent of them reported having experienced at least one problem with the service which represents a subsample of 1211 users. To select the consumers with such bad experiences with the service, the survey includes questions to all the mobile phone users about who had at least one problem with the service over the last twelve months. Individuals are asked whether they have experienced any of following problems during the period: delay for the service, coverage problems, incorrect billing, improper charging, breach of contract, trouble unsubscribing the service, difficulty in obtaining information, or any other problem. Thus the database is quite exhaustive as it indicates not only whether the user has experienced a problem, but the particular type of problem and if he has experienced one or several problems.

The obtained result of 28.5 percent of the whole group of mobile users perceiving at least one problem with the service deserves some comments. First, that ratio is large and especially when compared with the ratios obtained for other goods or services and for other countries. For example, comparing the data with those obtained in Monitoring consumer markets in the European Union (EU, 2012), it is noted that the average for the EU and for all services is 10%. Although smaller, there is also difference when compared with the rate of problems referred to mobile phone service that was 17 percent in 2012. That means that the mobile phone is a sector in which the incidence of problems is higher than the average of other services but in the case of Spain this difference is even more remarkable than in most other European countries (only Bulgaria has a higher rate of problems).

Once defined the set of consumers who report having had a bad experience with the service, one purpose of this work is to find out if they have some common characteristics that might suggest that they are more likely to perceive a problem. In that sense, the goal is to build a model in which the dependent variable is consumers who report having had problems with the service and introduce as potential explanatory variables several demographics and other characteristics related with the specific service.

The basic idea is that the probability of reporting problems in a particular service (step one of figure 1) depends critically on the quality of the service and the expectations of the consumer. And those expectations depend on a number of socio-demographic factors (age, gender, level of education, etc.) and a number of variables related to the relationship of the user with the service: type of contract (pre-paid or post-paid) or expenditure level dedicated to the service. In order to analyze the impact of those characteristics we elaborate two models where the dependent variable is the number of individuals declaring problems. The results are summarized in table 5.

Table 5. Logit regression analysis to determine factors associated with unpleasant experiences

Dependent variable =1 if reporting; =0 otherwise	MODEL 1 Socio-demographic status	MODEL 2 Socio-demographic + relationship with the provider
Gender (male)	0.12 * (1.82)	0.10 (1.44)
Age	-0.02*** (-8.48)	-0.02 (-7.18)
Education	0.05*** (3.75)	0.03 (2.23)
Operator	----	0.12 (2.91)
Expenditure	----	0.01 (4.01)
Post	----	0.21 (2.53)
Constant	-0.36 (-2.66)	-0.82 (-4.73)
LR χ^2	107.60 DF= 7	133.51 DF= 6
Pseudo-R ²	0.0222	0.0293
n	4119	3750

Notes: In parenthesis t-statistics. * Significant at 10%, ** significant at 5% and *** significant at 1%.

The results of Model 1 show that there is a certain influence of demographic characteristics of the individual to declaring problems with the service. Thus, for example, the older an individual is, the lower the probability of declaring problems with the service. Moreover, also the level of

education positively affects the likelihood of declaring problems with the service. One possible reason, in both cases, is that the younger and more educated users are more aware of their rights and have higher standards of quality.

On the other hand, the results of Model 2 suggest that there is a greater likelihood of finding problems with service among the users that perform a higher monthly expenditure and among those who have a post-paid contract. There is also an operator effect revealing that depending on the chosen provider there is a distinct probability of finding problems.

4. FACTORS AFFECTING THE DECISION OF COMPLAINING

This section studies the factors affecting the decisions to complain or not, conditional on having experimented a problem with the service. Before explaining the reasons leading to the decision of a consumer to complain (or not to complain), it may be useful to clarify that a complaint (step two of figure 1) should not be interpreted as being something negative for the company. On the contrary, Reichheld and Sasser (1990) argue that a limited number of complaints should be considered as an early warning signal. In fact, absence of complaints makes more difficult for the service provider to know when and why customers are unhappy (Ndubisi & Ling, 2006). Contrary to what one might think, the reduction of complaints should not be necessarily a goal of the company. The aim, rather, would be to facilitate that consumers with problems actually complain and then perform a good complaint management so that complainers end up satisfied.

Bearing in mind the existing literature (Mittal & Kamakura, 2001; Oliver, 1997; Singh & Wilkes, 1996; Ping, 1993; Moliner-Velázquez, Fuentes-Blasco, Gil-Saura, & Berenguer, 2010), a goal would be to identify those variables which directly or indirectly can have an influence on consumer complaint behavior. Knowing that the CCB is very complex and shows many facets, the impact of the following sets of potential explanatory factors will be analyzed:

- Sociodemographic factors. The idea is to group and profile customers according to different aspects (age, gender, education, etc.). It is important to notice that studies including these variables allow identifying specific demographic segments of the population to be the target of certain policies and strategies. However, in previous studies, the incidence of these factors is not conclusive since, in general, they are not statistically significant.
- Problem type. One of the objectives of this study is to explore whether there is a connection between problem types and customer reactions. In general, it would be expected that incidents with a monetary component were more likely to turn into a complaint.

- Reputation of the company. Given that making a complaint is a costly decision, the consumer will only do it if he has some certainty that it will be addressed. The relationship between that certainty and the reputation of the company will be investigated.
- Level of expenditure. It is expected that, all else equal, the higher the level of expenditure on mobile phone services, the greater the propensity to complain.
- Overall level of satisfaction. Another goal is to test if a user complaint is the reaction to a particular problem or, on the contrary, depends on an overall assessment of the situation and its evolution over time. Therefore, an explanatory variable controlling for the overall level of satisfaction is included in the model
- Type of contract. The expectation is that consumers with post-paid contracts have a higher propensity to complain than prepaid customers. This is based on the idea that prepaid customers will not incur in problems arising from for example billing and/or breach of offers, since they not have evidence about these issues because they do not get any bill.

The definitions of the specific variables used in our model are shown in table 6.

Table 6. Explanation of variables

Dependent variable		1 if complainer; 0 if non-complainer
Explanatory variables		Explanation
DEMOGRAPHIC FACTORS	Gender	1 if male; 0 if female
	Age	4 age groups: 18-29; 30-44; 45-64; ≥65
	Level of studies	4 levels of studies: Primary; High School; College; University
	Nationality	1 if Spanish; 0 if foreigner
PROBLEM TYPES	Delay for the service	1 if the problem occurs; 0 otherwise
	Coverage	1 if the problem occurs; 0 otherwise
	Incorrect billing	1 if the problem occurs; 0 otherwise
	Improper charging	1 if the problem occurs; 0 otherwise
	Breach of deals	1 if the problem occurs; 0 otherwise
	Difficulty unsubscribing the service	1 if the problem occurs; 0 otherwise
OPERATORS	Difficulty in obtaining information	1 if the problem occurs; 0 otherwise
	Movistar	1 if the individual belongs to Movistar; 0 otherwise
	Vodafone	1 if the individual belongs to Vodafone; 0 otherwise
	Orange	1 if the individual belongs to Orange; 0 otherwise
	Yoigo	1 if the individual belongs to Yoigo; 0 otherwise
EXPENDITURE	VMO	1 if the individual belongs to OMOV; 0 otherwise
	€/month	It is considered 4 expenditure levels: 2-20; 21-40; 41-60; ≥61
OVERALL SATISFACTION		Variable taking integer values from 1 to 10
TYPE OF CONTRACT		1 if post-paid contract, 0 if pre-paid contract

4.1. Model specification and model selection.

When consumers find a problem with the service, they are confronted with a binary choice (as seen in figure 1): whether or not to complain. This work elaborates a model for explaining the actual decision of the consumer. The dependent variable of the model is a binary variable that takes the value one if the individual decides to complain and zero otherwise. Logistic regression models are used to estimate the conditional probability of the dependent variable. When properly applied, logistic regression analyses yield very powerful insights into what attributes are more or less likely to predict event outcome in a population of interest. These models also show the extent to which changes in the values of the attributes may increase or decrease the predicted probability of event outcome. The main results of these models when applied to the dataset under study are summarized in table 7.

Table 7. Determinants of the decision of whether or not to complain. Odds ratios of the logistic regressions

		MODEL 3	MODEL 4	MODEL 5	MODEL 6	MODEL 7		
Delay in establishing the service		3.90 (2.37)	4.05 (2.42)	4.05 (2.44)	3.69 (2.24)	3.90 (2.37)		
Coverage problems		0.26 (6.20)	0.26 (6.11)	0.27 (5.94)	0.28 (5.70)	0.25 (6.21)		
Incorrect billing		4.32 (4.64)	4.33 (4.64)	4.32 (4.63)	4.18 (4.52)	4.22 (4.56)		
Incorrect billing for services not used		2.91 (3.63)	2.95 (3.67)	3.08 (3.77)	2.93 (3.56)	2.86 (3.56)		
Breach of contract or commercial offer		2.91 (3.07)	2.95 (3.11)	2.94 (3.08)	2.66 (2.80)	2.88 (3.04)		
Difficulty in cancelling the service		5.78 (3.89)	5.83 (3.89)	6.16 (3.97)	6.48 (3.83)	5.62 (3.82)		
Difficulty in obtaining the required information		2.58 (4.23)	2.60 (4.23)	2.59 (4.17)	2.50 (4.00)	2.60 (4.21)		
Contract (post-paid)		1.47 (2.28)	1.50 (2.38)	1.41 (2.00)	1.51 (2.25)	1.53 (2.46)		
Gender (male)		1.32 (1.87)	1.32 (1.83)	1.32 (1.84)	1.29 (1.69)	1.30 (1.74)		
Age	2	0.81 (1.13)	0.80 (1.20)	0.80 (1.20)	0.83 (0.97)	0.80 (1.20)		
	3	0.85 (0.81)	0.83 (0.92)	0.85 (0.78)	0.94 (0.29)	0.82 (0.93)		
	4	0.42 (2.53)	0.40 (2.59)	0.42 (2.49)	0.43 (2.27)	0.44 (2.02)		
Overall Satisfaction	2	---	---	1.56 (0.86)	Expenditure	Education	1.06 (0.28)	1.01 (0.05)
	3	---	---	0.69 (0.86)			1.07 (0.30)	0.92 (0.34)
	4	---	---	0.98 (0.05)			0.84 (0.67)	0.88 (0.43)
	5	---	---	0.88 (0.43)				
Movistar		---	0.60 (0.80)	---	---	---		
Vodafone		---	0.51 (1.04)	---	---	---		

Orange	---	0.56 (0.90)	---	---	---
Yoigo	---	0.88 (0.15)	---	---	---
Constant	1.45 (1.30)	2.53 (1.35)	1.62 (0.93)	1.33 (0.95)	1.53 (1.23)
LR χ^2	436.07 DF= 12	436.28 DF= 16	440.18 DF= 16	392.65 DF= 15	427.19 DF= 15
Pseudo-R ²	0.28	0.28	0.29	0.27	0.2812
Percent correct predictions	78.25%	78.51%	78.06%	77.89%	78.23%
n	1131	1126	1121	1063	1116

Notes: In parenthesis z-statistics. * Significant at 10%, ** significant at 5% and *** significant at 1%.

To facilitate the interpretation of the results, we present the odds ratios. The odds are simply the ratio of the proportions for the two possible outcomes (probability of complaining/probability of not complaining). Below each coefficient (in parentheses) the z-statistic is presented. If the value of z is equal to or greater than 1.96 in absolute terms, the considered variable has a significant impact on the odds ratio we want to explain. At the bottom of table 7, have been included several diagnostics of the different models (Chi-square, Pseudo R-squared³ and percent of correct predictions).

From the five models presented in table 7 (models 3 to 7) and after an exhaustive analysis of the results Model 3 is selected as the favourite in terms of goodness of fit and parsimony. Then each one of the models (4 through 7) is compared with Model 3 and at the same time, several models are abandoned in favour of Model 3, the main implications are:

- There is no operator effect. Model 4 shows that the variables taking care of the operator of each user are not statistically significant. That is, the probability of complaining is not altered by the fact of belonging to one or another company. Thus, neither the reputation of the companies or any other characteristic related to the company seems to influence consumer behaviour.
- Dissatisfaction is not a necessary condition for complaining. In Model 5 the different levels of overall satisfaction with the mobile services are included and according to the data they are not significant for explaining the probability of becoming a complainer. This result contradicts the hypothesis maintained by Crié (2003) according to which the decision to complain is the consequence of a whole process and not the consumer reaction to a specific problem.

³ A pseudo R-squared only has meaning when compared to another pseudo R-squared of the same type, on the same data and predicting the same outcome. In this situation, the higher pseudo R-squared indicates which model better predicts the outcome (Long & Freese, 2006).

- The propensity to complain does not depend on the level of expenditure of the user. In Model 6 a variable that takes into account four different levels of monthly expenditure made by the user is included. According to our data, this variable has no impact when deciding whether to complain or not.
- The level of education does not influence the probability of complain. Model 7 is the same as Model 3 but adding a categorical variable to take into account the educational level of the user. As can be seen from the z-statistics presented, in our sample, the level of education does not appear to have a significant impact on the decision to complain or not to complain.

4.2. Main results

After selecting Model 3, the main results are shown in this section.

- Types of Problems. First it is worth to emphasize how different types of service problems have a different impact on the decision to complain/not complain. This conclusion is new, especially when considering that most previous studies explain the consumer decision using almost exclusively socio-demographic characteristics of individuals (and ignoring the type of problem).

Ordering the types of problems according to their impact on the likelihood of complaining, yields (from highest to lowest): 1) difficulty in cancelling the service; 2) incorrect billing; 3) delay in establishing the service; 4) incorrect billing for services not used; 5) breach of contract or commercial offer; 6) difficulty in obtaining the required information and 7) coverage problems.

As an example the interpretation of the odds ratios corresponding to the problems with highest and lowest impacts on the user's decision is presented.

The interpretation for the case of difficulty in cancelling the service would be:

“Controlling for other variables in the model, if the user encounters difficulty for cancelling the service, the probability of complaining is nearly six times (5.78) the probability of not complaining”.

Similarly the interpretation of the results for the case where there are problems of coverage:

“Controlling for other variables in the model, if the user encounters a problem of coverage, the probability of complaining is little more than a quarter (0.26) of the probability of not complaining”.

One possible interpretation of this last result is that, with coverage problems, the user does not have much incentive to complain because he thinks that the outcome of his complaint is not going to produce a service improvement. Put another way, this type of problem would lead the user to change companies rather than voice his complaints.

- **Socio-demographic factors.** The results suggest that only two demographic characteristics of the users have some impact when deciding to complain: gender and age.

Gender: All other things being equal, males are 1.35 times more likely to become a complainer than females.

Age: A categorical variable to represent the age has been used to facilitate the interpretation of the results. The predicted probability of being a complainer for each of the four groups of age considered has been calculated while holding all other variables in the model at their means (see table 8).

Table 8. Probability of being a complainer after experiencing a service failure (by age group)

Age	Probability	z-value
18 - 29	0.71	22.34
30 - 44	0.67	23.36
45 - 64	0.68	20.23
65 or more	0.51	6.45

The above table shows that the predicted probability of being a complainer is 0.71 for the youngest users (18-29), while it becomes 0.51 for the oldest group (65 and over), holding the rest of the variables at their means.

- **Type of contract.** Finally, the data support the hypothesis that the type of contract of the user has a significant effect on the probability of complaining. In fact the probability is higher for those with a normal contract (post-paid) than for prepaid card users.

Regarding the goodness of fit of Model 3 in table 7, it is worth noting that:

1. According to the log likelihood chi-square the model as a whole is statistically significant, and
2. The model correctly predicts 78.25 percent of cases.

5. NEXT STEP: TO WHOM TO COMPLAIN

Once the decision of complaining has been taken, the next decision is where to complain (step 3 in figure 1). There are several alternatives: the service provider, government agencies, consumer organizations, mass media and even go to court. And, in making this decision, the consumer will analyze the probability of success of each of the different options and the cost that must be incurred. That is, it is a decision based on a cost benefit analysis.

According to the data used in this work, an overwhelming 96 percent of users complain, in the first instance, to the service provider. This is not surprising given the prevailing regulations in Spain in this regard. According to those rules, to file a complaint with the Telecommunications Customer Care Office of the Ministry of Industry is a necessary condition having previously submitted the complaint to the service provider itself. Moreover, to file a complaint with the consumer arbitration boards, although not necessary, is also highly recommended to submit the claim previously to the service provider. Therefore, the decision of whether to file a complaint with the provider or not is severely restricted by the aforementioned rules and lets the consumers little choice.

The information available reveals that 68.4 percent of individuals who complain to the service provider get their problem resolved. There is also information about subsequent decisions of individuals that did not solve their problem with the company. As shown figure 1 (step 5), there is a proportion of individuals who failing to solve their problem with the service provider, turn to third parties. In fact 35 out of 207 individuals go to higher instances and even some of them present his complaint to several agencies simultaneously.

Nested logit model could be used to model this sequence of decisions. Nevertheless for easiness of tractability the approach of using conditional models it is used. That is given the previous choice the determinants of the current decision is analyzed.

Our results are in line with those noted in previous studies. For example, Best and Andreasen (1977) say that third party complaint (for example, a consumer association or a hierarchically superior body) is one of the less chosen. And normally, when used it is not the first-choice option (Gronhaug, 1977).

6. IMPACT OF COMPLAINT MANAGEMENT ON OVERALL SATISFACTION

As said earlier, there is currently a broad consensus among researchers that complaints must be interpreted as positive events since they provide a second chance to the service provider. But they are a double-edged sword because if the supplier fails to take advantage of that second chance he

will lose the customer forever (Voorhees, Brady, & Horowitz, 2006). According to this, if the provider can give an adequate response to the complaint and satisfy the user, that will lead to greater overall satisfaction and therefore increase the likelihood of retaining the customer (Fornell & Wernerfelt, 1987; Gilly & Gelb, 1982).

The aim of this section is to test whether Spanish data support the hypothesis that proper management of complaints (measured here by the degree of consumer satisfaction with the complaint handling) has an impact on overall satisfaction and, if so, to quantify its effect.

This is achieved by developing a model in which the overall user satisfaction depends on his satisfaction with the different aspects of the service as well as satisfaction with the handling of complaints⁴. Specifically, in the model presented here the overall satisfaction depends on satisfaction with the following service characteristics: price, quality communication, customer care, clarity of charges, adequacy of rates, coverage, ease of finding rates and deals, easy to purchase new equipment, complementary services and, finally, satisfaction with the way the operator handles complaints.

The equation is estimated by Ordinary Least Squares (OLS) using STATA 12 and the results are shown in table 9.

Table 9. Overall satisfaction and its determinants

Dependent variable: Overall Satisfaction	Model 8	Model 9
Satisfaction with price	0.19 (4.33) ***	0.19 (5.32)***
Satisfaction communications quality	0.21 (3.42)***	0.20 (4.55)***
Satisfaction customer care	0.08 (1.77)*	0.08 (2.09)**
Satisfaction bill clarity	0.10 (2.18)**	0.14 (3.47)***
Satisfaction adequacy of rates	-0.01 (-0.23)	---
Satisfaction coverage	-0.01 (-0.30)	---
Satisfaction ease of finding rates and deals	0.01 (0.09)	---
Satisfaction ease of acquire new handsets	0.05 (1.28)	0.12 (3.80)***
Satisfaction complementary services	0.11 (1.95) *	---
Satisfaction complaint handling	0.27 (2.55)***	0.29 (3.13)***
Constant	1.78 (4.59)***	1.63 (4.74)***
n. observations	335	417
R ²	0.43	0.41

Notes: In parenthesis t-statistics. * Significant at 10%, ** significant at 5% and *** significant at 1%.

⁴ There are some previous studies doing something similar (Gijón, Garín-Muñoz, Pérez-Amaral, & López, 2014; Garín-Muñoz, Gijón, Pérez-Amaral, & López, 2014). The difference is that in the model presented here, in addition to including the aspects considered in the mentioned works, the degree of satisfaction with the handling of complaints as a key determinant of overall satisfaction is added.

Model 8 is specified using the ten explanatory variables mentioned above (which correspond with the ten aspects of service for which there is information on the degree of satisfaction). Then, after deleting the variables that were not significant, Model 9 is estimated.

According to the results of Model 9, the overall user satisfaction is positively related to their satisfaction with the price of the service, with communications quality, customer care, bill clarity, ease to acquire new handsets and especially with the way the service provider handles complaints. With respect to the latter aspect of satisfaction (Satisfaction with complains handling) which is the focus of attention, it must be said that this is the variable with the highest impact (0.29) on the overall level of satisfaction of the user. The next ones in order of importance are satisfaction with communications quality (0.20), satisfaction with price (0.19), satisfaction with bill clarity (0.14), satisfaction with ease of acquire new handsets (0.12) and satisfaction with customer care (0.08).

Then, according with the above results, it may be profitable to address the handling of customer complaints. Several reasons support this statement. On the one hand, from the analysis of complains important conclusions may be obtained that can help providers improve future service. Also, but not least important, if they know how to react and resolve user complaints satisfactorily, they may even turn around the situation and improve the overall satisfaction and consequently loyalty. Additionally, when users are satisfied with the handling of their complaints, a positive effect occurs through word of mouth, which helps to enhance the reputation of the company and therefore to attract new customers.

Everything said so far would indicate that companies might consider to devote efforts and financial resources to handling complaints. This is not something merely altruistic, but has a clear economic profitability.

There are several works dealing with this topic (Fornell & Wernerfelt, 1987; Goodwin & Ross, 1990; Halstead & Page, 1992; Porter, 1985). Some of them show that a proper defensive marketing strategy⁵ (appropriate handling of complaints) has a lower cost than an offensive marketing strategy (based on advertising and promotion). Therefore the recommendation, based on strictly economic arguments is that for maximizing the number of clients, the first step is to retain the existing ones. That means, among other things, to give priority to the attention of complaints they may have. Among all of those studies we want to highlight one entitled "*An investigation into whether complaining can cause increased consumer satisfaction*" by Nyer (2000). At the end of the article, the author provides a kind of "decatalogue" of what the provider

⁵ The objective of defensive marketing strategy is to minimize customer turnover (or, equivalently, to maximize customer retention) by protecting products and markets from competitive inroads.

should do in an attempt to maximize user satisfaction with the resolution of their complaints. Several of the recommendations are just common sense. Some of them are the following:

- Listen to what the customer has to say
- Say sorry (in many cases an apology is all the customer wants)
- Find out what you can do to repair the situation: a refund, exchange, redoing the work, free product, etc.
- Be prepared to train staff in complaint handling and insist that dealing with customers' problems is a priority.
- Ask the customer what they want and, so far as is possible, give it to them.
- Remember that, if you get the response right, that customer will be satisfied and will return to buy again.
- Record the details of the complaint and investigate why the product or service failed. You will never eliminate errors but, by addressing problems as they arise, you will avoid the disaster of a customer experiencing the same mistake twice.

By using these recommendations, the service provider can improve consumer satisfaction with complaint handling and, according to the results of Model 9, significantly improve overall customer satisfaction. Thus, it may happen that what was initially a failure of the service translates into an improvement in customer satisfaction if the provider properly handles the complaints.

7. CONCLUSIONS

This work conducts an analysis of the post purchase behaviour of the individual consumer of mobile phone services in Spain.

The first part of the analysis is about the differences between consumers who detect problems with the service and those who do not. In this sense, some common demographic characteristics among users who experience problems are found. Thus, for example, the probability of reporting an unpleasant experience with the service is higher for the younger and more educated people.

Second, once identified the group of consumers who have experienced problems, the next topic under study is to find out what factors determine the decision to complain or not to complain conditional on having experienced a problem. In this sense, the results indicate that the propensity to complain depends largely on the type of problem experienced by the user. It was also found that specific demographic characteristics of the user have some impact when deciding to complain or not. In fact, there is a higher probability of complaining for men and younger people

than for women and older people. On the other hand, from the negative side, the same analysis also allowed us to know that some factors which in principle would seem to have a clear impact on the decision to complain, finally did not. Among them it is convenient to emphasize, by its importance, that low overall satisfaction is not a prerequisite for complaining.

Third, once the individual has decided to complain, he/she should decide to whom to complain. Our work shows that there is an overwhelming majority of individuals who direct their complaints to carrier itself. This is especially the case when the complaint concerns with problems related to incorrect billing.

The last part of the study shows that a good handling of complaints by the operator will constitute a source of improvement in the overall user satisfaction. This result is of great interest for its implications when designing the marketing and customer care strategies of companies. Accordingly it seems reasonable to use the complaint management as a powerful tool to retain customers.

As a general conclusion for corporate policy it can be said that complaints must be interpreted as positive for the operator rather than a nuisance, because they allow to identify the weaknesses of the company. At the same time, by handling them properly, the company can improve overall customer satisfaction and retention.

However, the real danger for the operator lies in the existence of dissatisfied individuals who do not complain. A sensible goal should be to maximize the capture of all possible consumer complaints before they are manifested in negative behaviors such as badmouthing, complaints to third-parties, boycott, and/or exit. It therefore seems desirable to facilitate the procedures for complaining through quick and easy channels. Firms should make available both interactive, remote complaint channels, and possibly offering alternatives that preserve user anonymity if required.

A policy recommendation is that, in the spirit of facilitating the process of filing and solving complaints, it may be advisable that the Ministry of Industry would strengthen the office of attention to telecommunications users and streamline its procedures. It would be desirable also that it could deal with the complaints in a speedy way (less than the current six months typical delay) and that it could also deal with the complaints of small and medium enterprises.

One limitation of the study is that the 2009 data may seem outdated, but it must be noted that the purpose of this paper is to study relationships that are expected to be stable over time.

Another limitation of the study, due to the type of survey data, is the fact that the dynamics of an individual's complaining behaviour cannot be studied along time. On the other hand, while the results are specific to Spain, it would be interesting to analyze data from other countries, since it is possible that similar results hold elsewhere.

This study suggests the need for further research on this and related topics. A future research agenda would include a study on mobile telecommunications consumer protection in Spain and in comparison with other European countries. Another topic is the study of the satisfaction indices reported by SMREC (2013) in order to analyze the reasons behind the significant decline in 2011 and why there was such a large gap between Spain and the rest of the Europe in 2011 and 2012.

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