

# DOES THE CUSTOMERS' EDUCATIONAL LEVEL MODERATE SERVICE RECOVERY PROCESSES?

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## ABSTRACT

*Even the best companies can make mistakes. Research shows that effective management of service recovery processes boosts customer satisfaction. This paper explicitly analyses the role that consumers' educational level may play as potential moderating factor. Based on a quantitative research which takes as reference the Spanish mobile phone sector may suggest customers with higher educational level are more demanding than customers with lower educational level in terms of effort and justice. Customers with higher educational level, after positive recovery processes, seem to be more loyal than customers with lower educational level.*

*Our findings could potentially contribute to more effective service recovery process management if firms decide to segment customers based in the customers' educational level.*

## Keywords:

Service recovery, customer satisfaction, loyalty, educational level, PLS

## 1. Introduction

The current competitive environment and the existence of customers that are better educated and informed are two key factors that contribute to the provided service being one of the essential points in current businesses. Firms know that their success depends not only on quality products but also on a good customer service.

Quality customer service consists in satisfying the expressed needs as well as complying with customer requirements. Quality is achieved through the whole process of purchase, operations and evaluation. However, mistakes when providing the service are inevitable as pointed out by authors such as Chang and Hsiao (2008), DeWitt et al. (2008), Huang (2008), Michel and Meuter (2008) and Varela et al. (2008)—among others. Company errors have an impact on end-user perception and can affect satisfaction/dissatisfaction levels (Michel and Meuter, 2008). Effective service failure management, however,—and a timely solution—can restore customer satisfaction (Varela et al., 2008; Hocutt et al., 2006; Spreng et al., 1995; Bitner et al., 1990).

Therefore, ideas related with the Service Recovery Paradox are of interest in our research. This theory is rooted in the pioneering work of Bitner et al. (1990), McCollough and Bharadwaj (1992) and Zeithaml et al. (1996) and is also a launching point for a major line of research in the area of marketing, in general, and services marketing, in particular. As Maxham and Netemeyer (2002) point out, the enormous pressure most industries are currently under has turned the attention of both academic and business spheres back on this issue.

The impact of service recovery on customer satisfaction has been amply studied (e.g., Michel and Meuter, 2008; Varela et al., 2008). However, the possible moderating effect of customer's demographic characteristics in this area has been scarcely studied. Studies developed by authors such as Mattila (2010), Verhoef (2003), Homburg and Giering (2001), Mittal and Kamakura (2001) and Iacobucci and Ostrom (1993) consider the effect of gender and age and point out that men and women tend to display divergent behavior patterns.

Some of the previous research (Verhoef, 2003; Mittal and Kamakura, 2001; Homburg and Giering, 2001) suggest that customer's educational level may affect behavior and the way in which satisfaction is perceived. This argument allows us to assume that educational level may be important when evaluating complaints of the provided service. Yet, literature specifically analyzing the role of educational level in satisfaction models is hard to come by in services marketing research. Shahin and Chan (2006) is a rare exception, although it does not reach any explicit conclusions. In the case of service recovery research, we were not able to find explicit evidence of previous research on this area. Therefore the work presented in this paper tries to fill in this gap in the literature.

In such a context, this study aims to complement the existing literature and reach the following specific objectives: i) assess the impact of potential antecedents of satisfaction with service recovery processes, as well as the impact of satisfaction on customer's loyalty, ii) study the potential moderating role of the educational level variable in service recovery processes, and iii) reflect on implications for both business practice and the literature. To the extent that we achieve these goals we will be contributing to filling in the gaps mentioned by authors such as Shahin and Chan (2006) and Verhoef (2003).

The paper is structured as follows. Section 2 presents the literature review and the model of reference, taking as key reference service recovery processes. Section 3 is related with the empirical study. The front-end of the paper discusses the contribution of the current work to literature and practice as well as presents the main conclusions of this research.

## 2. Satisfaction with service recovery processes: the effect of customers' educational level

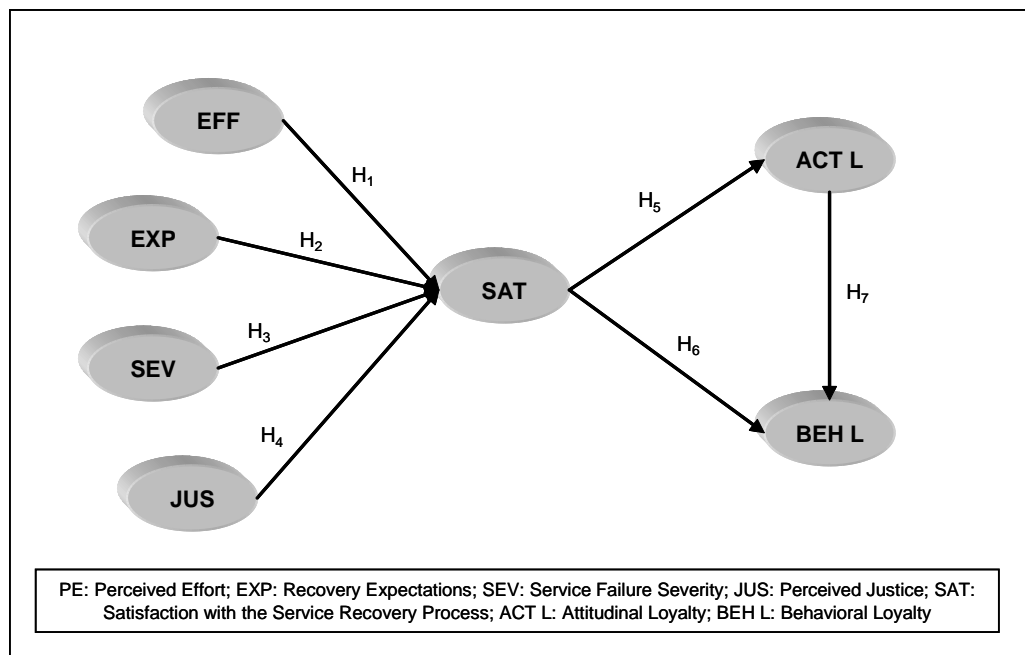
Today's increasing competitive environment leads to more alternative choices for customers that, as a result, become more demanding. This may lead to a decrease in the perception of the quality of the service provided. However, there still are situations in which such a perception

may be due to real provider's failures. And the fact is that, even though companies target excellent management, mistakes may still occur. Fortunately, in this situation, not everything is lost since the solution offered to the customer can even lead to positive satisfaction levels and create a process of positive word-of-mouth for the company (Bontis et al., 2007; Shankar et al., 2003). Therefore, there exists an increasing interest in improving not only the quality of the service but also the service recovery process –for example, suggestions, complaints, etc.- (Salavou, 2010; Chang and Hsiao, 2008).

The management of service recovery processes is based on the *service recovery paradox* (Maxham and Netemeyer, 2002; Zeithaml et al., 1996; McCollough and Bharadwaj, 1992; Bitner et al., 1990). This one refers to the cases in which a failure –objective or subjective –has taken place and the customer reaches even higher satisfaction levels than if the service was correctly provided in the first place. For this to happen, the customer post-sale interaction has to lead to a satisfactory solution (Magnini et al., 2007; Maxham, 2001). The study that we currently present is based on the previous idea, although it does not analyze the paradox per se. We assume that a customer complains when he does not achieve the expected satisfaction level. From the moment in which the service provider is aware of the failure we start the process analysis that may lead to customer satisfaction and increase in customer loyalty.

Based on the above ideas we propose the following causal model which is developed and justified in the next subsections.

FIGURE 1  
Causal model



### 2.1. Educational level

Authors such as Mattila (2010), Verhoef (2003), Homburg and Giering (2001), Mittal and Kamakura (2001) and Iacobucci and Ostrom (1993) consider the effect of consumers' demographic characteristics on buying behavior. Gender and age have been extensively studied, while the research specifically considering the effect of educational level is scarce. For instance, Paswan et al. (2003) investigate the relationship between brand loyalty towards country, state, and service provider taking into account contingency variables such as the educational level. They find that education have significant impact on the brand loyalty towards the service provider. More recently, Polo and Cambra (2008) analyse the influence of the educational level on industrial customers loyalty towards their suppliers.

In general, the previous papers seem to suggest customers with higher educational level tend to be more demanding but also more loyal than customers with lower educational level.

However, there is no evidence of research analysing how educational level may explicitly affect to service recovery processes models. Therefore this research proposes the above causal model (see figure 1) in which relationships will be moderated by the effect of consumers' educational level.

## **2.2. Perceived effort**

Perceived interest/effort can be defined as the customer perception of the energy and set of resources that the company devotes to solve his problem (Huang, 2008; De Matos et al., 2007). The interest/effort showed by the company, most of the times, is perceived by the customer through the interaction with the workers, which is a social element with positive impact in the company-customer relationship (Guenzi and Pelloni, 2004). The perceived effort contributes to create value for the customer and can impact on customer's satisfaction levels. Therefore, workers should show energy and willingness to solve the problem. Proper strategies for service failure situations would be to start with an apology, try to identify the failure's source, and offer reasonable solutions. It seems logical to think that the service recovery valuation will be affected by the perception of the effort level showed by the company and perceived by the customer. Moreover, there exist situations in which, even though the proposed solution was not the best one for the customer, if he has perceived a sincere interest and real effort on the company's side the customer's valuation is close to a satisfaction state (Mohr and Bitner, 1995).

**H1:** *The greater the perceived effort, the greater the perceived satisfaction following the service recovery process.*

In addition, taking as reference the idea that defends that higher educational level leads to more demanding customers, we propose that:

**H1<sub>A</sub>:** *Customers with higher educational level are more susceptible than customers with lower educational level to perceived effort and its impact on post-recovery customer satisfaction levels.*

## **2.3 Service recovery expectations**

The marketing literature suggests that expectations are an a priori valuation of what the customer expects to receive. In the marketing area the expectations concept is paramount and, therefore, the literature in that respect is wide (Grönroos, 1998). Applied to the service recovery processes domain, authors such as Hess et al. (2003) or Swanson and Kelley (2001) point out that the service recovery expectations are related with the customer's hope that the obtained solution is the appropriate and therefore, satisfactory for his own interests. Thus, higher customer's expectations lead to higher level of demands from the customer to the firm (Huang, 2008; Wirtz and Mattila, 2004).

**H2:** *The higher the client's expectations are with regard to service recovery, the lower the level of perceived satisfaction.*

Since the literature seems to suggest that consumers with higher educational level are more demanding, we can foresee that it will be harder to comply with customer's expectations, and therefore:

**H2<sub>A</sub>:** *Customers with higher educational level are more susceptible than customers with lower educational level to the impact service recovery-related expectations have on post recovery perceived satisfaction levels.*

## **2.4 Service failure severity**

*Service failure severity* is defined as the loss extent experienced by the customer during a negative incident (Huang, 2008). This loss may happen in terms of tangible aspects such as loss of money as well as intangible aspects such as anger or frustration. The literature suggests that the greater the loss extent the more difficult to achieve customer satisfaction with the service

recovery process (Magnini et al., 2007; Mattila, 1999). Therefore, both the service recovery process and the perception of the obtained result are related to the service failure severity (McCollough et al., 2000) to the point that the more service failure severity the less customer perceived satisfaction. This is due to the fact that as the severity increases the customer perceives less equity in the proposed solution. Based on the above arguments we propose that:

**H3:** *The greater the magnitude of the service failure, the lower the level of customer satisfaction with regard to service recovery.*

And again, due to higher expectation levels of customers with higher educational levels we propose:

**H3A:** *Customers with higher educational level are more susceptible than customers with lower educational level to the impact of service failure severity—with respect to service recovery—on perceived satisfaction levels with regard to service recovery processes.*

## 2.5 Perceived justice

The *justice theory* proposes that customers' fairness perception of an organization can be affected by the way they are treated by the organization (DeWitt et al., 2008). In general, justice theory espouses that individuals perceive that their treatment in a given situation can be categorized as their experiencing one of three forms of justice. These three forms of justice are distributive justice, procedural justice and interactional justice (Schoefer and Ennew, 2005; Homburg and Fust, 2005). Therefore, we can link justice perception to aspects related to the interaction process with the company and its workers as well as to the result of the interaction process itself (Maxham and Netemeyer, 2002). In this manner, when the customer experiences a fair treatment, and a good recovery overall, the individual tends to observe a high level of justice and therefore a satisfactory result.

**H4:** *The higher the level of perceived justice, the greater the level of satisfaction perceived by the client throughout the service recovery process.*

As mentioned in previous hypothesis customers with higher educational levels are more demanding and therefore we can propose:

**H4A:** *Customers with higher educational level are more susceptible than customers with lower educational level to perceived justice and its impact on post-recovery customer satisfaction levels.*

## 2.6 Customer's loyalty and satisfaction

The relationship marketing proposes that satisfaction is essential to retain customers (Gustafsson et al., 2005; Kim et al., 2004; Grönroos, 1998; Gummensson, 1997). A satisfied customer observes that his expectations have been fulfilled and therefore, he expects that, in the future, the organization will be capable of satisfy them again. Thus, we can expect that a satisfied customer will become a loyal customer. Loyalty can be defined as the customer compromise to a future acquisition of company's products, with two components, an attitudinal component and a behavioral one (Oliver, 1999). The attitudinal loyalty is related to the tendency of a customer to commit with the organization and, as Shankar et al. (2003) suggest, it cannot be reduced to observe the repurchase behavior. For instance, the positive word-of-mouth could also be an indicator of such attitude. Varela et al. (2009) suggest that as the level of perceived satisfaction with the service recovery process increases, the tendency to change to the competition decreases. Therefore, in this context we can assume that the probability of repurchase or the behavioral loyalty increases (DeWitt et al., 2008).

**H5:** *The higher the level of perceived satisfaction, the greater the degree of attitudinal loyalty displayed by the customer.*

**H6:** *The higher the level of perceived satisfaction, the greater the degree of behavioral loyalty displayed by the customer.*

**H7:** *Attitudinal loyalty towards a brand/company and behavioral loyalty towards a brand/company are directly proportional.*

Customers with higher educational level tend to be more loyal than customers with lower educational level, and therefore we can define the following set of hypothesis:

**H5<sub>A</sub>:** *Customers with higher educational level are more susceptible than customers with lower educational level to the impact of perceived satisfaction with service recovery efforts on attitudinal loyalty.*

**H6<sub>A</sub>:** *Customers with higher educational level are more susceptible than customers with lower educational level to the impact of perceived satisfaction with service recovery efforts on behavioral loyalty.*

**H7<sub>A</sub>:** *The impact of attitudinal loyalty vis-à-vis behavioral loyalty affects customers with higher educational level more than it does customers with lower educational level.*

### 3. Empirical study

#### 3.1. Technical data of the study

In order to test our hypothesis we analyze service recovery processes in the context of the mobile phone industry. Characteristics of this sector are provided in Appendix 1.

Our pilot study revealed that, on average, 25% of interviewed customers had experienced some sort of a problem with their mobile operator at one time or another. Only 16%, however, had filed a complaint and a mere 5% of the clients who had complained felt their problem had been resolved satisfactorily. Such findings suggest that i) Spanish mobile operators have a long way to go when it comes to effective complaint management; and ii) collecting data of this sort is no easy task. With this in mind, the decision was made to engage a data collection service; our inclusion criteria required that survey participants be legal adults who had experienced some sort of service-related problem with their mobile provider, filed a formal complaint and received a response from the company in question.

The fieldwork for our study was carried out in November and December, 2009; 202 surveys were compiled. All pertinent technical details can be found in Table 1.

In order to analyse the moderating role of educational level in service recovery processes, we split the sample in two groups: i) customers without university degree (NUD), and ii) customers with university degree (UD) following Shahin and Chan (2006) and Verhoef (2003) ideas. It is expected that higher levels of educational level may affect complaint behaviours and service recovery perceptions because of the knowledge of laws, skills to analyse solutions, etc.

TABLE 1  
Technical data of the study

|                               |   |
|-------------------------------|---|
| <b>Universe</b>               | Adult mobile phone users, who had experienced a problem with their mobile provider, filed a complaint and received a response from the company.   |
| <b>Geographical scope</b>     | Nation-wide (Spain)   |
| <b>Sample</b>                 | 202 adults  |
| <b>Participant profile</b>    | *Males: 104 (51.5%); Females: 98 (48.5%)<br>*Age 18-25: 73 (31.13%); Age 26-35: 61(30.19%); Age 35-50: 40 (19.80%);<br>Age 50-65: 23 (11.38%); Age 66+: 5 (2.47%)<br>*Students: 78 (38.61%); Employed: 90 (44.55%); Homemakers: 16 (7.92%);<br>Unemployed: 9 (4.45%); Retired: 9 (4.45%)<br>* No degree: 5 (2.5%); Elementary degree: 19 (9%); Secondary degree: 41 (20.4%); University degree: 137 (68.1%) |
| <b>Data collection period</b> | November-December, 2009   |
| <b>Data analysis</b>          | PLS and SPSS  |

We used the scales proposed by Huang (2008) to gauge *perceived effort*, *service error severity*, *recovery expectations*, and *post-recovery satisfaction*. For our assessment of *perceived justice*

and *customer loyalty* (attitudinal and behavioral) we opted in favor of the scales put forth by DeWitt *et al.* (2008). Prior to distributing the final survey we circulated a pretest we had fleshed out in collaboration with colleagues from Marketing departments at several different universities, PhD candidates, and a small sample of potential interviewees. With the context under scrutiny in mind, pertinent reliability and validity tests were run for all proposed scales—even in cases where the scale in question had previously been tested in earlier studies. The scales that were eventually selected have been included in Appendix 2 for easy reference.

We worked with a *Partial Least Squares* (PLS) structural equations analysis technique to evaluate the measurement model and significance of the hypotheses. *PLS-Graph version 03.00 build 1017* (Chin and Frye, 2003) was the software of choice.

### 3.2. Measurement model

It should be noted here that one of the constructs—*perceived justice*—is made operable via a molecular approach; this makes it a second-level factor which is the cause of its first-level components or factors (Chin and Gopal, 1995). Thus, it was essential to apply the approach in two phases—also referred to as *hierarchical components analysis* (HCA) (Lohmöller, 1989; Chin and Gopal 1995). We should note here as well that perceived justice is a second-level construct which is measured using three first-level factors: *distributive justice*, *interactive justice* and *procedural justice*.

With regard to our measurement model, we began by assessing the reliability of individual items. The indicators for all three samples are above the accepted 0.707 benchmark established by Carmines and Zeller (1979), as seen in Table 2. Only two items were below the accepted benchmark: *If another mobile provider offered lower prices or special discounts, I would make the change* (ACT L3), which was excluded from the total sample and the subsample for customers with university degree; *If this company raised its prices I would stay on as a client* (ACT L2), which was excluded from the subsample of customers without university degree.

In the case of construct reliability, the measurement scale of choice was *composite reliability* ( $\rho_c$ ) (Werts *et al.*, 1974). Careful scrutiny of the findings in Appendix 2 shows all constructs in all dimensions to be reliable across the three samples: indicator values above 0.8 (Nunnally, 1978).

When it came to assessing *convergent validity*, we turned to the *average variance extracted* (AVE) scale proposed by Fornell and Larcker (1981). Given that the 0.5 benchmark these authors establish is below the AVE for the different constructs/dimensions, we can affirm that convergent validity exists (see Appendix 1).

The presence of *discriminant validity* has been confirmed using AVE (Fornell and Larcker, 1981), comparing the square root of this measurement with the correlations among constructs. Discriminant validity is present in all samples, as seen in Appendix 3.

## 4. Findings

### 4.1. Structural model

Following this analysis of our measurement model, an assessment of the significance of the hypotheses proposed in the structural model is in order. It should be noted that PLS does not require that data derive from normal, or known, distributions—which explains why traditional parameter estimation techniques for testing model significance are considered inappropriate (Chin, 1998). Yet another difference between covariance-based structural equation models and PLS is that, in the latter, goodness-of-fit measures are not called for (Hulland, 1999). As seen in Table 2, the structural model is assessed i) using the variance value from the model ( $R^2$ ), and ii) considering the size of the standardized path coefficients ( $\beta$ ) after observing both the t values and the significance level obtained from the bootstrap test with 500 subsamples.

With respect to the antecedent variables for post-recovery satisfaction (see Table 2 for the total

sample and subsamples), we should note that customer expectations ( $H_2$ ) only has a significant impact on perceived satisfaction levels for the subsample of customers without university degree ( $\beta_{NUD}^1 = -0.276$ ;  $p < 0.05$ ). In a similar way, failure severity ( $H_3$ ) only has a significant impact on perceived satisfaction levels in the case of customers with university degree ( $\beta_{UD} = -0.1$ ;  $p < 0.05$ ). On the other hand, the relationships expressed by hypotheses  $H_1$  and  $H_4$ —links between perceived effort and justice, and customer satisfaction—were established: in the total sample ( $0.330$ ;  $p < 0.001$  and  $0.530$ ;  $p < 0.001$ ); and in both subsamples ( $\beta_{NUD} = 0.327$ ;  $p < 0.001$  and  $\beta_{UD} = 0.337$ ;  $p < 0.001$ ) and ( $\beta_{NUD} = 0.495$ ;  $p < 0.001$  and  $\beta_{UD} = 0.535$ ;  $p < 0.001$ ).

TABLE 2  
Results for the structural model (total sample and NUD/UD subsamples)

| Impact on endogenous variables                            | Total sample<br>(N=201)   | No University Degree<br>(N=64)  | University Degree<br>(N=137)  |
|---|---|---|---|
|   | <i>Path coefficients (<math>\beta</math>)</i><br><i>T value (bootstrap)</i> | <i>Path coefficients (<math>\beta</math>)</i><br><i>T value (bootstrap)</i> | <i>Path coefficients (<math>\beta</math>)</i><br><i>T value (bootstrap)</i> |
| <b>Impact on post-service recovery satisfaction (SAT)</b> | <b><math>R^2=0.627</math></b>   | <b><math>R^2=0.589</math></b>   | <b><math>R^2=0.683</math></b>   |
| $H_1$ : EFF→SAT   | 0.330*** (5.4951)   | 0.327*** (3.9612)   | 0.337*** (4.3626)   |
| $H_2$ : EXP→SAT   | -0.078 (1.7237)   | -0.276* (2.1865)  | -0.012 (0.2535)   |
| $H_3$ : SEV→SAT   | -0.022 (0.5443)   | 0.174 (1.8906)  | -0.100* (2.1583)  |
| $H_4$ : JUS→SAT   | 0.530*** (7.8346)   | 0.495*** (4.0938)   | 0.535*** (6.9460)   |
| <b>Impact on attitudinal loyalty (ACT L)</b>              | <b><math>R^2=0.290</math></b>   | <b><math>R^2=0.251</math></b>   | <b><math>R^2=0.265</math></b>   |
| $H_5$ : SAT→ACT L   | 0.538*** (10.1509)  | 0.500*** (4.4643)   | 0.515*** (7.4264)   |
| <b>Impact on behavioral loyalty (BEH L)</b>               | <b><math>R^2=0.558</math></b>   | <b><math>R^2=0.642</math></b>   | <b><math>R^2=0.567</math></b>   |
| $H_6$ : SAT→BEH L   | 0.241*** (3.4312)   | 0.230* (2.5089)   | 0.298*** (2.7477)   |
| $H_7$ : ACT L→BEH L                                       | 0.589*** (9.8366)   | 0.608*** (6.6404)   | 0.609*** (8.7702)   |

The impact of customer satisfaction on loyalty has been fully verified. On the one hand the relationship proposed in hypothesis  $H_5$  (attitudinal loyalty) with respect to the total sample has proven true ( $\beta = 0.538$ ;  $p < 0.001$ ); on the other hand, this relationship has been established for both subsamples ( $\beta_{NUD} = 0.500$ ,  $p < 0.001$  and  $\beta_{UD} = 0.515$ ;  $p < 0.001$ ).

In the case of behavioral loyalty, the relationship expressed by hypothesis  $H_6$  has also been established as true for the total sample ( $\beta = 0.241$ ;  $p < 0.001$ ) and both subsamples ( $\beta_{NUD} = 0.298$ ;  $p < 0.05$  and  $\beta_{UD} = 0.230$ ;  $p < 0.01$ ).

Finally, the proposed direct, positive relationship linking attitudinal and behavioral loyalty proved true for all three samples ( $\beta = 0.589$ ;  $p < 0.001$ ;  $\beta_{NUD} = 0.609$ ;  $p < 0.001$  and  $\beta_{UD} = 0.608$ ;  $p < 0.001$ ).

With regard to the explained variance of the endogenous variables ( $R^2$ ), our research model proved to be sufficiently predictive; findings were consistent across samples, as seen in Table 4.

#### 4.2. Analysis of the moderating effect of the educational level variable

In order to contrast the moderating role of educational level in the model, the *path* coefficients between the variables (see Table 2) must be compared. Yet, questions may arise regarding whether differences among the segments obtained for each variable—reflecting the nature of the relationship—are substantial enough to warrant behavioral differences in function of educational level. One statistical procedure designed to verify the significance of these

<sup>1</sup> From now on: NUD = No University Degree; UD = University Degree.



comparisons (in which a t-test is run) is the multigroup analysis<sup>2</sup> put forth by Chin (2000) and employed by Keil et al. (2000).

In short, for significant relationships, the identified segments suitably distinguish between different predicting variables and their dependent variables, as seen in Table 3.

TABLE 3  
T test for multigroup analysis

| Impact on endogenous variables                    | SE                   |                   | Sp    | $\beta_{UD}\text{-}\beta_{NUD}$ | T value |
|---|----------------------|-------------------|-------|---------------------------------|---------|
|   | NO UNIVERSITY DEGREE | UNIVERSITY DEGREE |       |                                 |         |
| <u>Impact on post-recovery satisfaction (SAT)</u> |                      |                   |       |                                 |         |
| H <sub>4A</sub> : JUS→SAT (UD>NUD)                | 0.1209               | 0.077             | 0.102 | 0.040**                         | -2.775  |
| <u>Impact on behavioural loyalty (BEH L)</u>      |                      |                   |       |                                 |         |
| H <sub>6A</sub> : SAT→BEH L (UD>NUD)              | 0.1188               | 0.0837            | 0.103 | 0.068***                        | 4.661   |

\*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$  (based on a two-tailed test  $t_{(0.01; 199)} = 2.600760199$ ;  $t_{(0.001; 199)} = 3.340086547$ )

SE = Standard error

Sp = Separate variance estimate

The intensity of the relationship proposed in hypothesis H<sub>4A</sub> is greater for customers with university degree than for customers without university degree ( $\beta_{UD} > \beta_{NUD}$ ,  $p < 0.01$ ). In the case of hypothesis H<sub>6A</sub>, our study demonstrates that *satisfaction* has a greater impact on *behavioral loyalty* among customers without university degree than it does among customers with university degree ( $\beta_{NUD} > \beta_{UD}$ ,  $p < 0.001$ ). There are not significant differences between both subsamples for the relationships: perceived effort-satisfaction, satisfaction-attitudinal loyalty and attitudinal loyalty-behavioral loyalty and therefore we can not accept H<sub>1A</sub>, H<sub>5A</sub>, H<sub>7A</sub>.

The link between *customer expectations* and *satisfaction* (H<sub>2A</sub>) is not significant for the customers with university degree subsample, while the same relationship is clearly significant for the customers without university degree subsample. On the other hand, the link between *failure severity* and *satisfaction* (H<sub>3A</sub>) is significant for customers with university degree and it is not for customers without university degree.

Since these two relationships have not been established in both subsamples, the multigroup analysis could not be performed on them. Nevertheless, our model shows that customer expectations are a significant antecedent of satisfaction for those customers with a lower educational level and failure severity is a significant antecedent of satisfaction for those with a higher educational level.

The Tippins and Sohi (2003) approach was adopted in order to test the moderating impact of *attitudinal loyalty* (ACT L) on *post-recovery satisfaction* (SAT) and *behavioral loyalty* (BEH L). This approach recommends an analysis of competing models in which two substantive models are gauged and evaluated for significant differences. In the first model, the direct relationship linking SAT and BEH L is explored; in the second, the same relationship is examined, this time with the ACT L in a moderating role. In the case of both the total sample and the two subsamples, the model which includes ACT L in a moderating role explains more

$$t = \frac{Path_{NUD} - Path_{UD}}{Sp \sqrt{\frac{1}{m} + \frac{1}{n}}} \approx t(m+n-2) \text{ Student's t-distribution of a one-tail test and the number of degrees of freedom}$$

freedom stated in the expression  $(m+n-2)$ ,  $Sp$  being the separate variance estimate,  $m$  the number of cases in Sample 1,  $n$  the number of cases in Sample 2, and  $SE$  the standard error for the path provided by PLS-Graph (bootstrap technique).

$$Sp = \sqrt{\frac{(m-1)^2}{m+n-2} x SE^2_{NUD} + \frac{(n-1)^2}{m+n-2} x SE^2_{UD}}$$

BEH L variance than the other model. There is a positive correlation between SAT and ACT L and between SAT and BEH L across all samples.

The significant relationship linking SAT and BEH L in the direct impact model diminishes in importance across all three samples in the mediation model. In light of these findings, we can affirm that ACT L plays a moderating role for SAT and BEH L. Table 4 presents data corresponding to our calculation of the total impact (direct and indirect) on BEH L. We used the test proposed by Sobel (1982) to calculate the significance of indirect impact, obtaining the statistic  $z$ . As we can see in Table 4, the moderating impact of ACT L on SAT and BEH L is confirmed by the  $z$  statistic, with a value of  $p < 0.001$  across all three samples. The magnitude of indirect impact on the total is derived from the *variance accounted for* (VAF) put forth by Iacobucci and Duhachek (2003). In the total sample, 56.8% of the total impact of SAT on BEH L is due to indirect impact, climbing to 50.69% in the case of customers without university degree and 57.6% for customers with university degree.

TABLE 4  
Total impact on behavioral loyalty (BEH L)

| SAMPLE                              | CONSTRUCT | DIRECT IMPACT | INDIRECT IMPACT |                        |         | TOTAL IMPACT  |
|-------------------------------------|-----------|---------------|-----------------|------------------------|---------|---------------|
|                                     |           |               | Value           | $z$ (Sobel)            | VAF     |               |
| Total                               | SAT       | 0.241         | 0.3168***       | 6.8235 ( $p < 0.001$ ) | 0.56800 | <b>0.5578</b> |
|                                     | ACT L     | 0.589         | -               |                        |         | <b>0.589</b>  |
| Customers without university degree | SAT       | 0.298         | 0.3045***       | 3.8045 ( $p < 0.001$ ) | 0.50589 | <b>0.6025</b> |
|                                     | ACT L     | 0.609         | -               |                        |         | <b>0.609</b>  |
| Customers with university degree    | SAT       | 0.230         | 0.3131***       | 5.5460 ( $p < 0.001$ ) | 0.5760  | <b>0.5431</b> |
|                                     | ACT L     | 0.608         | -               |                        |         | <b>0.608</b>  |

## 5. Discussion

For the context analyzed (the mobile sector in Spain) results suggest the importance of effective service recovery strategies, as authors such as DeWitt et al. (2008), Michel and Meuter (2008), Zeithaml et al. (1996) and Bitner et al. (1990) among others, defend. Not even the best companies are immune to making mistakes; this is something that the vast majority of consumers tend to understand. That said, complaint management and service recovery strategies clearly must lead to a reasonable solution if full customer satisfaction is to be recuperated and company image to remain intact. In this sense, successful recovery from a service failure can translate into enhanced customer satisfaction and loyalty, as long as the company has effectively shown its ability to solve the problem. Adequate service recovery processes are become important switching barriers.

Results for the global sample indicate that service failure severity and expectations for recovery do not have a significant impact on perceived satisfaction ( $H_2$  and  $H_3$ ). Such results contradict claims by authors like Magnini et al. (2007), Mattila (1999), Hoffman et al. (1995), and McCollough et al. (2000)—who defend that service failure severity is inversely proportional to post service recovery satisfaction—and Huang (2008), Hess et al. (2003) or Swanson and Kelley (2001) with respect to the expectations-satisfaction relationship. However, our findings demonstrate that the customers' educational level plays a moderating role with regard to the relationships proposed in service recovery models: while expectations are significant only for customers with lower educational level, customers with higher educational level seem to be more demanding but also, after checking the firm's capability, more loyal. This could be because education allows customers to have more capabilities and skills for analyzing the normative and comparing alternatives. We can also suppose that after getting a satisfactory solution, customers with higher educational level are more aware about the benefits of being loyal (reduction of uncertainty, time and effort savings, etc.). Whatever the case may be, this is

merely a supposition as our findings are not conclusive. We must therefore call for further investigations in this respect.

Customer's perceptions regarding mobile company efforts to deal with problems ( $H_1$ ), on the other hand, do have a direct, significant impact on customer satisfaction with service recovery. Existing studies (Huang, 2008; De Matos et al., 2007; Mohr and Bitner, 1995) suggest that customers value the interest and effort companies invest in resolving problems. It has even been pointed out that if real, sincere desire is perceived, customer satisfaction will exist even if a solution does not. The implications of this are clear: when service failure occurs or customers express dissatisfaction, the company should make an effort to get to the bottom of the problem and provide a solution, while making sure the client is well aware that the company is taking steps in the right direction. Our results also indicate no differences between subsamples. We consider that this could be due to the fact that the greater the range of choices, the more entitled the customer feels to receive satisfactory service from the get-go; customers expect effort from the firm independently of their educational level.

The literature called for additional research into the impact of perceived justice (DeWitt et al., 2008; Varela et al., 2008). Our fourth hypothesis ( $H_4$ ) proposes a direct relationship between *perceived justice* and post service recovery satisfaction. The data suggests such a nexus exists, aligning us with authors like DeWitt et al. (2008), Chang and Hsiao (2008), Maxham and Netemeyer (2002) and Tax et al. (1998). However, our data suggest differences between subsamples: for customers with higher educational level justice is more relevant than for customers with lower educational level. This could be because perhaps education allows customers to better perceive and analyze what the firm offers to solve the problem. We can therefore accept  $H_{4A}$ . In any case, given that perceptions with respect to justice can vary notably between companies and clients, it would be a good idea for companies to invest in getting to know what customers expect, and what they consider fair, in order to adapt to their needs or, at the very least, help them understand that the solution provided is the most appropriate and fair given the problem in question.

Whichever route is eventually taken, the company should react quickly i) to understand underlying factors and ii), to communicate with the customer. This shows the company's desire to find a satisfactory solution to the problem. Moreover, as Mattila (2006) suggests, it is essential that firms explain how the error occurred and what is being done to deal with it.

Lastly, this study sets out to find a nexus between satisfaction with service recovery processes and loyalty. Results for the global sample indicate that  $H_5$ ,  $H_6$  and  $H_7$  are significant and therefore, a relationship between satisfaction and loyalty (attitudinal and behavioral) exists. In this line we can suggest that satisfaction becomes a key relational tool with the potential to make switching costly for the client.

In many cases customer-company interaction could be channeled to cultivate longer-lasting relationships. Knowledge gleaned from this type of feedback would equip firms to tailor services more specifically to present needs and future expectations, while affording clients a better grasp on a service provider's actual capacity to react in the face of service failure.

Our initial multi-sample analysis—later corroborated by our impact study of moderating effects—establishes that, in service recovery contexts (as in other situations) customers with higher educational level are more loyal than customers with lower educational level. This is the specific case for the satisfaction-behavioral loyalty ( $H_{6A}$ ).

## 6. Conclusions

This research analyses some nexus between antecedents to perceived customer satisfaction and service recovery process. Links between such satisfaction and customer loyalty towards a company which had dropped the ball but later offered a solution has been also analyzed. Our proposal also explicitly analyzes the moderating role of the customers' educational level

variable in service recovery scenarios. In this sense, our study contributes to narrowing the gap identified in the first section of the paper.

Our findings corroborate research recognizing the positive impact of service recovery efforts. However, some different patterns between customers with higher and lower educational levels have been identified: customers with higher educational levels seem to be more demanding but also more loyal than customers with lower educational level. Implications were already discussed in the former section.

However, despite the inherent interest of the study, it is clearly not without its limitations. For one, only the Spanish mobile phone sector has been analyzed; a sector which is representative but which exhibits significant idiosyncrasies. The literature called for exploring sectors which had yet received little attention from researchers and our data is, for the most part, in line with results reported in previous studies. Even so, one must be cautious when extrapolating findings across sectors: an analysis of potential structural/conjunctural similarities and differences would be in order.

Secondly, this is a cross-sectional study based on the opinions expressed by customers themselves. It would be interesting to carry out a longitudinal analysis of the entire complaint process, followed by an objective assessment of service provider solutions and final outcomes. From a practical standpoint, however, getting involved in customer-company interaction can be an extremely complex endeavor; and, after all, the key to the service recovery paradox lies in customers' perceptions of how they are treated and to what extent their problems are, or are not, resolved.

Finally, with regard to potential lines for future research, it would be interesting to analyze the moderating effect of other consumer profile variables such as age, profession, income, etc. An international study comparing mobile company behavior patterns and customer perceptions might justify adopting a relational approach—which customers in our pilot study sample showed an interest in—vis-à-vis maintaining the more aggressive approach which, for the moment, seems to prevail in Spain.

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## APPENDIX 1

### **The mobile phone sector in Spain**

We test our hypothesis in the Spanish mobile phone sector. This industry will serve as our framework for analyzing the significance of the proposed model. Telecommunications is currently the most aggressively competitive sector in Spain (Polo and Sesé, 2009)—and one of the most affected by globalization of services, due to the high rate of technological development. Moreover, the ever-increasing range of choices enhances consumer decision-making power (Maícas and Sesé, 2008). Up until 2004, as Rivero and Manera (2005) point out in a recent study, mobile operators were still able to find small pockets of potential clients who had not yet been tapped. Market saturation became the reality from that point on, however, and—to date—capturing clients from the competition has become the only route to growth.

Yet another of the strategies of choice, aimed at maintaining activity levels within the mobile phone sector, has been the quest for new applications, models and 'limited time offers'. The result: a 4% increase in business across the industry in 2009, peaking at 52.9 million counting both company and individual clients—the equivalent of 114.6 lines per one hundred inhabitants (Juste, 2010).

Such a competitive framework underscores the importance of a deep understanding of the client—of knowing exactly what customers want and expect in order to effectively position oneself in the market (Maícas et al., 2009; Polo and Sesé, 2009). Apparently, however, marketing strategies have become much more aggressive, as our pilot study revealed; a whole slew of more attractive, 'new and improved' products which, paradoxically, are relatively distant from the original market need and 'raison d'être'. Pricing strategies and 'limited time offers' appear to be aimed more at capturing new clients than fostering real customer loyalty. As a result, in the Spanish mobile phone sector a) there is very little difference between one mobile operator and another in terms of the services they offer; b) new clients are harder and harder to come by; c) the skyrocketing cost of capturing new clients means it takes longer and longer to recuperate the initial investment; d) ambitious sales objectives have driven many mobile companies to come up with strategies to draw clients away from competitors—at any cost; e) an industry known for high rotation and quick client turnover. In the authors' opinion, such findings call for fostering more conservative strategies, perhaps, in order to really guarantee customer satisfaction and loyalty; to this end, strategies linked to relationship marketing and the service recovery paradox might be our best bet. Moreover, despite research by Hur et al. (2010), Polo and Sesé (2009), Wieringa et al. (2007), and Lee et al. (2006) pointing out the value of the mobile phone industry as a point of reference for empirical research in the context of service marketing, to date it has not been considered in the light of the service recovery paradox.

## APPENDIX 2

## Measurement scale items, individual reliability, composite reliability and variance extracted (total sample and subsamples)

| Construct/Items  | Total sample    |                                    |       | Customers without university degree |                                    |       | Customers with university degree |                                    |       |
|--|-----------------|------------------------------------|-------|-------------------------------------|------------------------------------|-------|----------------------------------|------------------------------------|-------|
|  | Loading factors | Composite reliability ( $\rho_c$ ) | AVE   | Loading factors                     | Composite reliability ( $\rho_c$ ) | AVE   | Loading factors                  | Composite reliability ( $\rho_c$ ) | AVE   |
| <b>PERCEIVED EFFORT (EFF)</b>  |                 |                                    |       |                                     |                                    |       |                                  |                                    |       |
| <i>EFF1</i> : Staff seemed very interested in solving the problem.   | 0.8799          | 0.922                              | 0.797 | 0.8306                              | 0.903                              | 0.756 | 0.9025                           | 0.931                              | 0.818 |
| <i>EFF2</i> : Staff invested a lot of time in solving the problem.   | 0.8970          |                                    |       | 0.8836                              |                                    |       | 0.9022                           |                                    |       |
| <i>EFF3</i> : Staff went out of their way to solve the problem.  | 0.9010          |                                    |       | 0.8928                              |                                    |       | 0.9090                           |                                    |       |
| <b>RECOVERY EXPECTATIONS (EXP)</b>   |                 |                                    |       |                                     |                                    |       |                                  |                                    |       |
| <i>EXP1</i> : I expected the company to do everything it could to resolve the issue.   | 0.8715          | 0.890                              | 0.802 | 0.9496                              | 0.878                              | 0.784 | 0.8169                           | 0.884                              | 0.793 |
| <i>EXP2</i> : I expected the company to compensate me in some way.   | 0.9189          |                                    |       | 0.8164                              |                                    |       | 0.9587                           |                                    |       |
| <b>SERVICE FAILURE SEVERITY (SEV)</b>  |                 |                                    |       |                                     |                                    |       |                                  |                                    |       |
| <i>SEV1</i> : I had a serious problem that needed a serious solution.  | 1               | 1                                  | 1     | 1                                   | 1                                  | 1     | 1                                | 1                                  | 1     |
| <b>PERCEIVED JUSTICE (JUS)</b>   |                 |                                    |       |                                     |                                    |       |                                  |                                    |       |
| <i>DIS J1</i> : After filing a complaint, the outcome was fair.  | 0.8878          | 0.925                              | 0.804 | 0.8964                              | 0.929                              | 0.813 | 0.8862                           | 0.924                              | 0.802 |
| <i>DIS J2</i> : The company provided me with what I needed.  | 0.9146          |                                    |       | 0.9103                              |                                    |       | 0.9167                           |                                    |       |
| <i>PRO J1</i> : The company responded promptly and justly to my needs.   |                 |                                    |       | 0.8873                              |                                    |       | 0.8831                           |                                    |       |
| <i>PRO J2</i> : The company was flexible enough when dealing with my problem.  |                 |                                    |       |                                     |                                    |       |                                  |                                    |       |
| <i>PRO J3</i> : Company policies and procedures were appropriate for dealing with my concerns.                                     |                 |                                    |       |                                     |                                    |       |                                  |                                    |       |
| <i>INT J1</i> : The company was sufficiently concerned about my problem.   | 0.8873          |                                    |       |                                     |                                    |       |                                  |                                    |       |
| <i>INT J2</i> : The company communicated with me appropriately.  |                 |                                    |       |                                     |                                    |       |                                  |                                    |       |
| <b>RECOVERY SATISFACTION (SAT)</b>   |                 |                                    |       |                                     |                                    |       |                                  |                                    |       |
| <i>SAT1</i> : On this particular occasion I feel the company provided a satisfactory solution for my problem with my mobile phone. | 0.9438          | 0.945                              | 0.846 | 0.9694                              | 0.968                              | 0.938 | 0.9298                           | 0.933                              | 0.875 |
| <i>SAT2</i> : I'm happy with the company (regarding this particular problem with my mobile phone).                                 | 0.9498          |                                    |       | 0.9681                              |                                    |       | 0.9411                           |                                    |       |
| <b>ATTITUDINAL LOYALTY (ACT L)</b>   |                 |                                    |       |                                     |                                    |       |                                  |                                    |       |
| <i>ACT L1</i> : I plan to stay on as a client of this company in the future.   | 0.8744          | 0.817                              | 0.691 | 0.9198                              | 0.824                              | 0.703 | 0.8603                           | 0.826                              | 0.703 |
| <i>ACT L2</i> : If this company raised its prices I would stay on as a client.   | 0.7860          |                                    |       | -                                   |                                    |       | 0.8163                           |                                    |       |
| <i>ACT L3</i> : If another mobile provider offered lower prices or special discounts, I would make the change                      | -               |                                    |       | 0.7481                              |                                    |       | -                                |                                    |       |
| <b>BEHAVIORAL LOYALTY (BEH L)</b>  |                 |                                    |       |                                     |                                    |       |                                  |                                    |       |
| <i>BEH L1</i> : I plan to sign up with the competition for my mobile phone needs. (I)  | 0.8942          | 0.870                              | 0.770 | 0.8725                              | 0.854                              | 0.745 | 0.8977                           | 0.876                              | 0.780 |
| <i>BEH L2</i> : I will never acquire a mobile phone from this company again. (I)   | 0.8603          |                                    |       | 0.8534                              |                                    |       | 0.8680                           |                                    |       |

**Note:** Scales run from **1** (*totally disagree*) to **7** (*totally agree*). **(I)** Inverted item



APPENDIX 3  
Discriminant validity

| Sample                              | Constructs | EFF           | EXP           | SEV      | JUS           | SAT           | ACT L         | BEH L         |
|-------------------------------------|------------|---------------|---------------|----------|---------------|---------------|---------------|---------------|
| Total                               | EFF        | <b>0.8927</b> |               |          |               |               |               |               |
|                                     | EXP        | -0.011        | <b>0.8955</b> |          |               |               |               |               |
|                                     | SEV        | -0.013        | 0.298         | <b>1</b> |               |               |               |               |
|                                     | JUS        | 0.622         | -0.100        | -0.123   | <b>0.8966</b> |               |               |               |
|                                     | SAT        | 0.661         | -0.141        | -0.115   | 0.746         | <b>0.9465</b> |               |               |
|                                     | ACT L      | 0.359         | -0.185        | -0.207   | 0.548         | 0.538         | <b>0.8312</b> |               |
|                                     | BEH L      | 0.363         | -0.246        | -0.258   | 0.522         | 0.558         | 0.719         | <b>0.8774</b> |
| Customers without university degree | EFF        | <b>0.8694</b> |               |          |               |               |               |               |
|                                     | EXP        | 0.024         | <b>0.8854</b> |          |               |               |               |               |
|                                     | SEV        | 0.032         | 0.452         | <b>1</b> |               |               |               |               |
|                                     | JUS        | 0.528         | 0.061         | 0.119    | <b>0.9016</b> |               |               |               |
|                                     | SAT        | 0.587         | -0.159        | 0.118    | 0.672         | <b>0.9685</b> |               |               |
|                                     | ACT L      | 0.195         | -0.182        | -0.040   | 0.404         | 0.500         | <b>0.8384</b> |               |
|                                     | BEH L      | 0.288         | -0.171        | -0.047   | 0.447         | 0.603         | 0.759         | <b>0.8631</b> |
| Customers with university degree    | EFF        | <b>0.9044</b> |               |          |               |               |               |               |
|                                     | EXP        | -0.058        | <b>0.8905</b> |          |               |               |               |               |
|                                     | SEV        | -0.039        | 0.218         | <b>1</b> |               |               |               |               |
|                                     | JUS        | 0.668         | -0.179        | -0.236   | <b>0.8955</b> |               |               |               |
|                                     | SAT        | 0.700         | -0.149        | -0.241   | 0.786         | <b>0.9354</b> |               |               |
|                                     | ACT L      | 0.390         | -0.220        | -0.326   | 0.550         | 0.515         | <b>0.8384</b> |               |
|                                     | BEH L      | 0.389         | -0.276        | -0.349   | 0.550         | 0.543         | 0.727         | <b>0.8831</b> |

<sup>a</sup> The data forming the diagonal line in bold corresponds to the square root of the average variance extracted (AVE) for the construct, while the rest of the numbers represent correlations between constructs.

<sup>b</sup> All correlations are significant for  $p < 0.01$ .