

# Impact of Service Recovery on Customer Loyalty: A Study of E-Banking in Spain

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## *Abstract*

*The purposes of this study are twofold: (i) to propose and apply a scale to measure service recovery in the electronic banking (e-banking) sector; and (ii) to examine the relationship between service recovery and customer loyalty in the setting of e-banking services.*

*An online questionnaire is used to survey 123 Spanish customers of e-banking services using a modified version of the E-RecS-QUAL scale. The data are analysed by exploratory factor analysis to: (i) test the applicability of the scale to the setting of online bank services; and (ii) generate a model including constructs for e-recovery and e-loyalty.*

*The study reassures online banks that a modified version of the E-RecS-QUAL scale is an appropriate instrument for measuring service recovery. The study also provides empirical evidence that responsiveness to requests and complaints has a positive influence on e-loyalty.*

*The study is the first to provide definitive empirical evidence of the presumed link between the recovery dimensions proposed in the E-RecS-QUAL scale and the construct of e-loyalty.*

**Keywords:** *recovery; electronic commerce; electronic service quality; E-RecS-QUAL*

**JEL classification:** G29

## **Introduction**

The term 'service recovery' refers to actions taken by a service provider to address a customer complaint regarding a perceived service failure (Grönroos, 1988). Service recovery has received considerable attention in the academic literature (Davidow, 2003; McCullough *et al.* 2000; Tax *et al.*, 1998; Parasuraman, 2006) because effective recovery management has been shown to have a

significant positive effect on customers who have reacted adversely to a service failure (Berry and Parasuraman, 1991). An understanding of effective recovery management is particularly relevant for service providers because the distinctive characteristics of services (especially the inseparability of production and consumption) make it impossible to ensure 100% error-free service (Fisk *et al.*, 1993).

With regard to services provided on the Internet, effective service recovery is essential because online customers are difficult to attract and retain (Srinivasan *et al.*, 2002), and it is easy for them to switch their online providers (Reichheld & Scheffer, 2000; Semeijn *et al.*, 2005). It is therefore extremely important that service providers on the Internet know how to improve loyalty levels and repeat purchasing decisions among their customers (Anderson & Srinivasan, 2003; Doong *et al.*, 2008; Semeijn *et al.*, 2005; Shamdasani *et al.*, 2008; Srinivasan *et al.*, 2002; Wang *et al.*, 2006; Yang & Peterson, 2004). Effective service recovery plays an important role in ensuring such loyalty. Of course, it is preferable that e-providers deliver a service without failures (McCollough *et al.*, 2000)—because, in general, providers fare better in the eyes of consumers by avoiding service failure than by responding to failure with superior recovery. However, when a failure has occurred, effective service recovery is considered essential to business survival in general (Berry & Parasuraman, 1991), and in the context of e-commerce in particular (Reichheld & Scheffer, 2000).

To assess the effectiveness of such service recovery, a valid and reliable measurement instrument is required. The most widely used instrument appears to be the E-RecS-QUAL scale (Parasuraman *et al.*, 2005). However, studies suggest that certain modifications of this scale are required for application in various settings, including the e-banking sector (Kim *et al.*, 2006; Fuentes *et al.*, 2008; Yen & Lu, 2008; Akinici *et al.*, 2010).

Against this background, the purposes of this study are twofold. The first is to propose and apply a scale to measure service recovery in the electronic banking (e-banking) sector in Spain. The second is to assess the impact of service recovery on loyalty in this context.

The remainder of this paper has five sections. After this introduction, the second section presents a review of the relevant literature. In the third section, we described our methodology. The results are presented in the fourth section (which discusses validation of the service-recovery scale) and in the fifth section (which examines the impact of service recovery on loyalty). The conclusions and implications are presented in the sixth section.

## 1. Literature review

The first multidimensional scales proposed to measure electronic-service (e-service) quality adapted the five service-quality dimensions of the well-known SERVQUAL instrument (Parasuraman *et al.*, 1988) to the online context. The SERVQUAL scale, which was a pioneering instrument for assessing service

quality, has been successfully adapted and utilised in a variety of sectors and cases (Ladhari, 2009). For example, in the banking industry, which is the field of interest to the present study, Kumar *et al.* (2010) recently used the SERVQUAL instrument to assess the quality provided by both Islamic and conventional banks in Malaysia.

Attempts to develop specific measuring instruments for service quality in e-commerce initially focused on the technical dimensions of e-service quality—such as website design, navigation, speed, and content (Barnes & Vidgen, 2002). However, Zeithaml *et al.* (2000) suggested that a more integrated vision of e-service quality was required—based on the criteria that are used by online customers to evaluate the holistic service encounter including both the transaction and the post-transaction experience. Parasuraman *et al.* (2005) subsequently published two scales for assessing e-services. The first one of these, which was called ‘E-S-QUAL’, included 22 items arranged in four dimensions (‘efficiency’, ‘fulfilment’, ‘system availability’, and ‘privacy’). The second scale, which was called ‘E-RecS-QUAL’, was designed for application when customers had non-routine encounters with websites, including episodes of attempted service recovery. The latter scale included 11 items arranged in three dimensions: (i) ‘responsiveness’ (effective handling of problems and returns through the website); (ii) ‘compensation’ (the degree to which the website compensates customers for problems); and (iii) ‘contact’ (availability of assistance through telephone or online representatives).

These two scales have subsequently been utilised in several empirical studies in various settings. Boshoff (2007), who examined the relationship between e-quality and e-loyalty, proposed that the E-S-QUAL scale should have six dimensions rather than the four of the original instrument. Marimon *et al.* (2010), who applied the E-S-QUAL instrument to an analysis of the relationship between loyalty and purchasing in the context of an e-supermarket, expanded Boshoff’s (2007) model by adding another new construct. More recently, Meng (2010) applied both the E-S-QUAL scale and E-RecS-QUAL scale in an African American cultural setting and a Chinese cultural setting.

Fuentes-Blasco *et al.* (2010) also made an interesting contribution when they adapted items from these two scales (E-S-QUAL scale and E-RecS-QUAL) to assess service quality in an e-bank. Their study confirmed Parasuraman and Grewal’s (2000) theoretical ‘consequence chain’—that e-service quality has a positive effect on perceived value, and that perceived value then has a positive effect on e-loyalty. Other studies to have adapted items from the E-S-QUAL scale in various settings include Boshoff (2007) and Marimon *et al.* (2010), and studies that have adapted items from E-RecS-QUAL in various settings have included Kim *et al.* (2006), Fuentes *et al.* (2008), and Yen & Lu (2008).

Akinci *et al.* (2010) also utilised these scales to assess e-service quality of 13 banks in Turkey. Their study proposed a refined version of the E-S-QUAL scale for Internet-based banks, and their use of the E-RecS-QUAL scale demonstrated that the ‘responsiveness’ and ‘compensation’ dimensions of scale have a significant

and positive effect on customer loyalty (although there was no evidence of a relationship between the ‘contact’ dimension of this scale and customer loyalty).

Apart from these adaptations of the E-S-QUAL and E-RecS-QUAL scales, some authors have proposed other scales incorporating various dimensions for assessing quality in e-bank services. Zhilin *et al.* (2004) proposed a five-dimensional measurement instrument (‘reliability’, ‘responsiveness’, ‘competence’, ‘ease of use’, ‘product portfolio’, and ‘security’), whereas Osman *et al.* (2005) proposed a different five-dimensional scale adapted to the Cyprus market (‘service environment’, ‘interaction quality’, ‘reliability’, ‘empathy’ and ‘technology’).

## 2. Methodology

### 2.1 Sample and data collection

From the Spanish banks’ derive database, online banking users were randomly invited by mail and directed to a specific website containing the structured questionnaire, which they then self administered. The questionnaire began with a dichotomous screening question, seeking only respondents who are: (i) consumers of e-banking services; and (ii) having experienced at least one problem with e-banking services.

The field work was completed in May 2010. After refusing some incomplete or invalid questionnaires, 123 valid completed questionnaires remained from Spanish customers of e-bank. The demographic characteristics of the sample are summarised in Table 1. No gender bias was detected. Half of the respondents were aged less than 34 years. The educational level of the sample was high, with two-thirds of the sample having a university degree.

**Table 1 Demographic characteristics of the sample**

Age category		
	Number	%
Between 17 and 24 years	15	12.2
Between 25 and 34 years	48	39.0
Between 35 and 44 years	40	32.5
Between 45 and 54 years	14	11.4
Between 55 and 64 years	5	4.1
= > 65 years	1	.8
Total	123	100.0
Gender		
	Number	%
Male	61	49.6
Female	62	50.4
Total	123	100.0

Education level		
	Number	%
High School	15	12.2
College	20	16.3
Bachelor's degree	48	39.0
Master's degree	32	26.0
Others	8	6.5
Total	123	100.0

## 2.2 Questionnaire

The questionnaire was adapted from the original E-RecS-QUAL scale (Parasuraman *et al.*, 2005) for application in online banking services. In accordance with Akinci *et al.* (2010), some items were removed. The first two items of the original 'responsiveness' dimension and the second and third items of the 'compensation' dimension were discarded because they were not applicable to this particular sector. Seven items were retained. These were arranged in three dimensions as follows: 'responsiveness' (three items), 'compensation' (one item), and 'contact' (three items). In addition, loyalty intentions were assessed with five items used by Parasuraman *et al.* (2005). The full list of items was as follows:

### *Responsiveness*

- \*RES1 This site offers a meaningful guarantee.
- \*RES2 This site tells me what to do if my transaction is not processed.
- \*RES3 This site takes care of problems promptly.

### *Compensation*

- \*COM1 This site compensates me for problems it creates.

### *Contact*

- \*CON1 This site provides a telephone number to reach the company.
- \*CON2 This site has customer service representatives available online.
- \*CON3 This site offers the ability to speak to a live person if there is a problem.

### *Loyalty intentions*

- \*LOY1 I will say positive things about this online banking site to other people.
- \*LOY2 I will recommend this online banking site to someone who seeks my advice.
- \*LOY3 I will encourage friends and others to do business with this site.
- \*LOY4 I consider this online banking site to be my first choice for future transactions.
- \*LOY5 I will do more business with this site in the coming months.

All items were measured on five-point Likert-type scales (1 = 'strongly disagree'; 5 = 'strongly agree').

### 3. Results

As noted above, the two purposes of the study were: (i) to propose a scale to measure e-service recovery; and (ii) to assess the impact of service recovery on loyalty in this context. The relevant results are presented below.

#### 3.1 Measurement scale for assessment of e-service recovery

To identify the quality dimensions derived from the present data, an exploratory factor analysis was conducted on the data from the items of the 'responsiveness', 'compensation', and 'contact' dimensions. The Kaiser-Meyer-Olkin (KMO) measure was 0.847. Bartlett's sphericity test was 347.008, with a significance of 0.000. In accordance with the recommendations of John and Reve (1982) and Hair et al. (1998), only two dimensions were apparent. These two factors accounted for 69.6% of the variation in the sample.

The first factor was similar to the 'responsiveness' dimension of the original E-RecS-QUAL scale. The three items of 'responsiveness' and the single item of 'compensation' all loaded clearly in this factor, which retained the label 'responsiveness' in the present study. The loads of the four items ranged between 0.742 and 0.858.

The second factor, which was labelled 'contact' in the present study, was clearly loaded by all three 'contact' items from the original scale. The loads of the three items ranged between 0.741 and 0.857.

The reliability of each of these two recovery factors was then assessed (see Table 2). Acceptable levels were achieved in all criteria (Hair *et al.*, 1998). Cronbach's alpha coefficient and composite reliability exceeded the threshold value of 0.7 for internal consistency in every instance (Nunnally & Bernstein, 1994). In addition, two exploratory factor analyses were performed, one for each factor. Both analyses extracted only one factor. These findings confirmed the unidimensionality of each item to its first-order dimension.

**Table 2 Reliability of the adapted E-RecS-QUAL subscales**

Subscale	Items	Cronbach's alpha	Range for Cronbach's alpha removing one item	Range for correlations of the items and the sum of the subscale
Responsiveness	RES1, RES2, RES3, COM1	.835	.747 - .835	.573 - .763
Contact	CON1, CON2, CON3	.771	.647 - .741	.559 - .643

A first-order confirmatory factor analysis was performed using EQS software. In view of the size of the sample, a robust maximum-likelihood estimation method was chosen. The comparative fit index (CFI) was 0.982 and the root mean-square error of approximation (RMSEA) was 0.053. The fit indices shown in Table 3 were acceptable (Byrne, 1994; Hu & Bentler, 1999). The Satorra-Bentler scaled chi-square was 25.47 on 19 degrees of freedom and its probability value for the chi-square statistic was 0.15. The loadings were all high (at a significance level of 0.05). The model was therefore confirmed as an acceptable fit for the data.

**Table 3: Loadings on quality factors and goodness-of-fit statistics for the adapted E-RecS-QUAL scale**

Responsiveness	Loadings*	p-value	r <sup>2</sup>
RES1	.752	fixed	.566
RES2	.729	8.718	.532
RES3	.901	9.768	.813
COM1	.614	6.769	.377
Contact			
CON1	.593	fixed	.352
CON2	.699	5.350	.489
CON3	.868	5.206	.754

\* These are the loads estimated from Confirmatory Factor Analysis.  
All parameters significant at  $p < 0.05$

Goodness of fit statistics (Robust method)

$\chi^2$	14.23 (p-value = .3577)
df	19
CFI	.996
Bentler-Bonett non-normed fit index	.994
Bollen's (IFI) fit index	.996
RMSEA	.028
90% confidence interval for RMSEA	.000; .096

Content validity of the scale can be assumed on the basis of the close similarity between the present scale and the original E-RecS-QUAL model of Parasuraman *et al.* (2005). Convergent validity was confirmed when the factor loadings of the confirmatory model were found to be statistically significant (level of 0.05) and greater than 0.5 (Sanzo *et al.*, 2003).

In summary, the first objective of the study was realised by establishing that a scale that is very close to the generic E-RecS-QUAL scale is suitable for assessment of service recovery in e-banking services in the Spanish context.

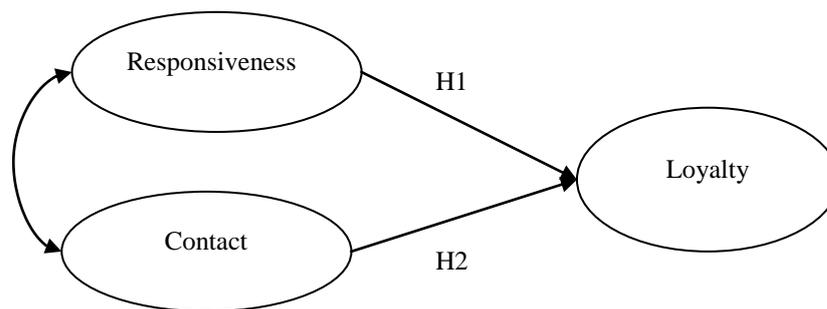
### ***3.2 Relationship between recovery and loyalty***

To analyse the extent to which recovery influences customer loyalty, a construct of ‘loyalty’ was required. The five ‘loyalty’ items noted above had a Cronbach’s alpha of 0.929, which confirmed the reliability of the construct. An exploratory analysis was conducted with the five items, which revealed only one factor. This had an eigenvalue greater than one, and captured 78.18% of the variance.

Structural equation modelling (SEM) was conducted using ESQ software to assess the impact of the two dimensions of recovery (as identified above) on the construct of loyalty. As shown in Figure 1, two hypotheses were formally proposed:

Hypothesis H1: The dimension of ‘responsiveness’ has an impact on e-loyalty.

Hypothesis H2: The dimension of ‘contact’ has an impact on e-loyalty.



**Figure 1 Hypothesised relationships between the dimensions of recovery and loyalty**

The comparative fit index (CFI) was 0.995 and the root mean-square error of approximation (RMSEA) was 0.026. The Satorra-Bentler scaled chi-square was 14.23 on 13 degrees of freedom and its probability value for the chi-square statistic was 0.36. The loads were all high (at a significance level of 0.05). The model was therefore also an acceptable fit for the data.

The standardised solution was:

$$\text{Loyalty} = 0.838 * \text{Responsiveness} - 0.057 * \text{Contact} + 0.600 * D$$

in which:

D is the disturbance term; and

$r^2$  is 0.640.

Only the first dimension of recovery (‘responsiveness’) had a *p*-value high enough (6.280) to ensure its reliability. The other path (for the dimension of ‘contact’) was not significant (*p*-value = 0.580). The covariance of the two independent constructs was 0.390, with a *p*-value of 4.582. These results confirmed the first hypothesis, but negated the second hypothesis.

The findings were in general accordance with Akinci *et al.* (2010), who reported that both 'responsiveness' and 'compensation' had significant and positive effects on loyalty in their study of e-service quality of banks in Turkey. In the present study, these two dimensions ('responsiveness' and 'compensation') were merged into a single dimension of 'responsiveness'. It would thus seem that responsiveness is a key factor in producing loyalty among customers of e-services. As in conventional services, customers expect prompt feedback regarding requests and complaints.

The present findings were also in accordance with Akinci *et al.* (2010) regarding the lack of impact of the dimension of 'contact' on loyalty. As suggested by Akinci *et al.* (2010), it would seem that online customers are reluctant to experience direct personal interaction with service personnel, even when a problem occurs.

### Conclusions

The study has found that a modified version of E-RecS-QUAL scale (Parasuraman *et al.*, 2005) is valid for measuring service recovery in the e-banking context among Spanish customers. The study has also found that service recovery has a significant effect on loyalty among these customers.

Although several previous studies of e-service have established that a link exists from service quality to loyalty, with satisfaction being a mediating construct (Anderson & Srinivasan, 2003; Ribbink *et al.*, 2004; Boshoff, 2007; Cristobal *et al.*, 2007; Marimon *et al.*, 2010; Lin, 2010), fewer studies have analysed the behaviour of online customers who have experienced a problem with the service received. It is true that some studies have examined the concept of e-service recovery in itself (McCullough *et al.*, 2000; Parasuraman *et al.*, 2006; Lin, 2010), but there has been little research into the question of how such e-service recovery influences consumer behaviour. The present study has therefore made a significant contribution by demonstrating that e-service recovery has an important effect on e-loyalty. Moreover, the study has shown that two dimensions of service recovery ('responsiveness' and 'contact') are relevant in the e-banking sector, but that only one of these ('responsiveness') has a significant influence on loyalty.

The findings have implications for managers, who should be aware that the most important dimension of e-service recovery in terms of enhancing customer loyalty is 'responsiveness'. Managers should therefore ensure that all problems and returns are effectively handled through their websites. This is the most critical point in seeking to restore customer confidence after a service failure. Moreover, managers should note that the 'contact' dimension has no effect on loyalty. It would seem that customers of e-banking services prefer to deal with problems through the Internet, rather than by direct personal contact with service personnel (Akinci *et al.*, 2010).

With regard to future research, it would be interesting to establish how e-recovery affects satisfaction. This would require examination of a wider model, in

which the relationships among e-quality, e-recovery, and e-satisfaction are all included.

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### **Acknowledgment**

This study is part of a wider research project entitled "Impact of management standards on customer satisfaction" (2009 PBR 00056), financed by the Agència de Gestió d'Ajuts Universitaris i de Recerca (AGAUR) of the Catalan government via funding from the Baptista Roca Program for research.