

## INVESTIGATING DISCREPANCIES BETWEEN E-SERVICES IMPLEMENTING OR NOT ISO 9001: CUSTOMERS' OUTLOOK IN THE BACKDROP OF E-SERVICES IN CATALONIA (SPAIN)

**Petnji Yaya Luc Honore  
Marimon Frederic  
Casadesus Marti**

*University of Girona Escola  
Politécnica Superior Edifici P-  
1 Dep. OGEDP  
Av. Lluís Santaló, s/n Campus  
de Montilivi 17071 – Girona  
(SPAIN)  
E-mail:  
[arinopetnji@hotmail.com](mailto:arinopetnji@hotmail.com);  
[marti.casadesus@udg.edu](mailto:marti.casadesus@udg.edu);  
[finarimon@cir.uic.es](mailto:finarimon@cir.uic.es)*

**Abstract:** *This paper seeks to investigate from customers' perspective, if the implementation of ISO 9001 with the scope directly related to customers (offices, claims, etc.), spawn any discrepancies on service quality, customer perceived value, customer satisfaction, customer loyalty and customer service recovery; in the backdrop of e-services in Catalonia (Spain).*

*The main research target consists of e-banks operating in the region of Catalonia (Spain), besides customers who regularly use internet to do their banking. Self completed questionnaire was designed from a blend of existing constructs. An analysis of variance (ANOVA) was performed to a convenience sample of 428 customers of e-banking services (123 of them reported a complained about the service) and 16 banks.*

*The results reveal that e-banking customers in Catalonia were not sensitive to the usage of ISO 9001. However, customers from banks that do not implement ISO 9001 perceived that the prices of the service available on their bank site were more economical.*

*Research limitations and implication this study was done only in Catalonia expandability might be restricted. Further investigation may be done in Spain as a whole or in different countries and settings.*

*Originality/value based on literature reviews, this study will be one of the first to carry out such research from customers' perspective and more specifically in Catalonia. The results of the study were useful in validating previous findings.*

**Keywords** *ISO 9001, Customer service quality, Customer satisfaction, Customer loyalty, Service recovery*

### 1. INTRODUCTION

Intensifying competition and rapid deregulation have led many service and retail businesses to seek profitable ways to differentiate themselves [33]. Although no longer believed to be revolution previously conceived, the internet remains a critical channel for selling most goods and services [34].

Fuelled by the growth of electronic commerce, many businesses have incorporated the use of the Internet to enhance their service delivery. In particular, service industries that are information-based, such as the banking industry, have invested heavily on providing electronic services to their customers [46].

Observably customers' fondness for e-services is due to the convenience it offers, like making it possible to embark on business transaction without any restriction on opening time from wherever internet access is available. Since there are no geographic or physical constraints associated with e-service, in other words competing services are just a mouse click away from each other, e-service providers have to compete on quality of service delivered in order to attract and retain their customers. In an online setting, service providers

compete with companies very similar to themselves so that they often respond by employing customer retention strategies[11].

Thus realizing customers are very demanding in terms of service quality, and the possibility of having a disparity between what customers need and what service provider think their customers need. Numbers of service providers were keen to adopt ISO 9001:2008 with the scope directly related to customers (offices, claims, etc) as a key ingredient to service quality differentiation.

Observably ISO 9000:2005 principles and practices of quality management have its origin from the manufacturing settings [44]. The great success of the standard encouraged practitioners and scholars in transferring and applying them to e-service sector.

Therefore it is essential for managers to understand the influence and the effectiveness of ISO 9001:2008 certification towards their organization's performance from the customers' perspective.

Given that some of the service providers are directly involved in the implementation of the standard, one can clearly assumed significant bias in this investigation. Evidently much has already been written

about the impacts and benefits of ISO 9000:2005 (principle) and ISO 9001:2008 (system) standards on business performance.

The findings mostly support the notion that the implementation of this standardized quality assurance system is beneficial for organizations. However, those who are not in favor argued that the benefits of ISO 9000:2005 has brought leads to much more confused and uneven results from the point of view of organizations. For example, while some companies highlight organizational improvement, others emphasized only the marketing benefit [8].

Based on literature reviews we acknowledge that there have been number of published papers that have attempted to deliver an understanding of the impact and benefits of ISO 9000:2005, the evolution of the standard from the past, present and future (e.g. [45]; [35]; [8]; [9]; [20], [44]). Since countless, if not all the published papers have entrenched their investigation from the organizations standpoint. We were unable to locate any empirical research that firmly grounded their investigation from customers' perspective. Therefore we have chosen to conduct our research drawing heavily on this foundation.

## 2. OBJECTIVE

The rationale of ISO 9001:2008, is quality management system applicable to all organizations' products and services, it help to ensure that quality is build into a process and is achieved. It ensures that an organization has quality policy, that procedures are standardized, that defects are monitored, that corrective and preventative action systems are in place [3]. Such observation highlight a critical importance to understand, the merit of quality of service delivered drawn from ISO 9001:2008.

However the literature review reveals confusion and gaps in understanding the nature of ISO 9001:2008 from the organizations standpoint. Thus this gap provides the impetus to scrutinize from customers' perspective if:

*Hypothesis H1:* ISO certification in e-service induces higher levels of customers' perception of efficiency

*Hypothesis H2* ISO certification in e-service induces higher levels customers' perception of system availability

*Hypothesis H3* ISO certification in e-service induces higher levels of customer s' perception of fulfillment

*Hypothesis H4* ISO certification in e-service induces higher levels of customers' perception of privacy

*Hypothesis H5:* ISO 9001 certification in e-service induces higher levels of customers' perceived value

*Hypothesis H6* ISO 90001 certification in e-service induces higher levels of customer's satisfaction

*Hypothesis H7* ISO 90001 certification in e-service induces higher levels of customers' loyalty intension on the website.

*Hypothesis H8* ISO 9001 certification in e-service induces higher levels of customers' perception of responsiveness in respect to website

*Hypothesis H9* ISO certification in e-service induces higher levels of customers' perception of contact with regard to a website.

*Hypothesis H10* ISO certification in e-service induces higher levels of customers' perception of compensation.

This paper is organized as follows: it opens with section 3, literature reviews that introduce all the concepts to analyze as well as the consequence chain between them. In addition it provides updated information about important aspect of those concepts to customers. In section four the methodology will be described. The results and findings will be presented in section five, conclusion in section six, references in section 7 follows be the appendix.

## 3. LITERATURE REVIEW

### 3.1. Customer satisfaction

More than just attracting customers, there is need to retain them and keep them coming back to the site and this can only happen if they are satisfied. Customer satisfaction is define as a person's feeling of pleasure or disappointment resulting from comparing a product's perceived performance (or outcome) in relation to his or her expectations[27].

[17] pointed out that customer satisfaction can be attained by companies, which have understood their customers' needs and make every effort to provide services in an effective and efficient manner. Whereas [14] asserted that customer satisfaction plays a vital role in marketing because it helps to have repeat sales, gather positive word-of-mouth recommendations and build brand loyalty.

In general, higher levels of customer satisfaction can lead to a reduction of the perceived benefits of alternative suppliers and hence to higher repurchase intentions [2]. Moreover customer satisfaction leads to greater trust which in turn enhanced customer loyalty, willingness to pay more and cross-buying. [10] initiate that perceived e-service quality affect positively customer satisfaction and loyalty.

Indeed satisfaction with electronic environments drives traffic to web sites and encourages repeated use of the site [36]. Ultimately the quality of e-service leads to trust and satisfaction [39].

Various studies appear consensus emerging that

customer satisfaction is a key determinant of customer loyalty. [5] states that the precise nature of the interaction between customer satisfaction and loyalty is notoriously elusive but satisfaction would appear to have a positive effect on service loyalty. [12] established that high satisfaction results to customers with increased loyalty, less prone to be approached from competition.

Also [2] found that satisfied customers have greater propensity to be retained and resist to alternative options. Similar results were reported in e-banking services e.g. [3] established that customer satisfaction contributed towards improved financial performance of banks as well as the positive effects of e-service quality on customer satisfaction.

### 3.2. Impact of ISO 9001

In a global market quality remains a competitive reality. Undoubtedly for numbers of organizations in general and banks in particular the issue of improvement in the quality of products and services remain imperative. ISO 9001:2008 which belong to the family of ISO 9000:2005 standard is a generic management system that can be applied to any organization.

Furthermore is a widespread model for quality management systems with a goal to guarantee quality control and assurance. Often branded as competitive advantage, with the endeavor to identify and anticipate customer requirements. As well as enhance internal and external performance of the organization while keeping to its optimum satisfaction and loyalty of customers and other parties involved.

ISO 9001:2008 has gain popularity as number of certifications that have been issued soared to more than 982,832 in 176 countries world wide [23]. The popularity of ISO 9000:2005 implementations, unfortunately, also translates into a dilemma. With mixed success in implementation, praise and criticism on ISO 9000:2005 certification are easy to find from trade magazines, news media and the business community.

These standards do not seem to provide many external benefits and competitive advantage any more, as most competitors in the industries that require ISO registration are already registered. Those companies are now looking for tangible internal benefits from the new ISO 9000:2000 standards [9].

Nevertheless related scholar research on the benefits of ISO 9000:2005 has been extensively conducted from many perspectives with different outcomes. E.g. [45] emphasized that the most important benefits are internal like: improve awareness of the importance of quality, of the problems of the company and improvement in product quality.

While [35] affirmed the most important benefits are external like: increased customer satisfaction,

satisfaction of customers' requirements and improvement in product quality and market competitiveness. [44] substantiate that ISO certification significantly improve the effectiveness of quality management practices and that service experienced better improvement than manufacturing in five out of six areas investigated.

The benefits of ISO 9000:2005 certification in general are very difficult to measure by, for example, rises in productivity or increase market share [24] despite these difficulties in quantifying and measuring benefits, "internal" and "external" aspects companies can be distinguished [43].

This distinction is used in this study, by calling e-service users to help interpret the results of implementing ISO 9001:2008 standards in e-service setting.

### 3.3. Measuring Service Quality

During the past few decades, service quality played vital role as a key factor in differentiating service offerings. Service quality has been a centre of attention from practitioners and scholars; because of its strong impact on customer trust, customer loyalty, customer satisfaction, business performance. [18] confirmed that service quality helps to maximize profits of service providers and to reduce uncertainty for the buyer of services. Service quality is defined as a measure of how well the level of the delivered services matches customer's expectation [34].

It should be noted that e-service quality has the potential to increase attractiveness, hit rates, customer retention and positive word of mouth (Santos, 2003).

Different instruments were developed to capture and elucidate service quality by various researchers to numerous service industries, but most of measuring instruments were largely based on SERVQUAL, service quality models developed by [33]. The primary value of SERVQUAL lies in its powerful benchmarking, diagnostic, and prescriptive tools [25]

Nonetheless with the development of e-commerce and e-service, SERVQUAL has been subjected to critical theoretical and experimental assessments, as it is not fairly appropriate to evaluate e-service quality. E-service quality is the overall customer assessment and judgment of e-service delivery in the virtual marketplace [40].

In these circumstances instrument such as E-S-QUAL was developed [33]. The instrument demonstrate good psychometric properties as a meant of evaluating e-service quality and has received considerable attention in the academic literature. [6] extended the original instrument to six dimensions instead of four, and demonstrated important relationships between the dimensions of e-service quality and the construct of perceived value and loyalty; consistent with [34] findings. [28] expanded Boshoff model in a setting of an

online supermarket in Spain, adding a new construct, analyzing the relationship between loyalty and purchasing.

Recently, [30] also conducted measurement equivalence tests, applying the two scales (E-S-Qual and E-RecS-Qual) to the African American and Chinese cultural settings, and found that the e-service quality measurement can be generalized to different cultures. [13] for measuring the e-service quality dimensions adapted the items from E-S-Qual and E-RecS-Qual scales, and confirmed consequence chain: electronic service quality -perceived value - e-loyalty adapted from [32] theoretical proposal

Another stream of scholars' scrutinized e-service quality in e-banking contexts specifically ([3]; [26]; [1]).

[26] developed an index to measure online customer satisfaction to help banks to assess their e-service quality.

[1] appraised the electronic service quality offered by 13 banks in Turkey, providing a refined and more stable version of the E-S-Qual scale for the internet banks. They found that e-service quality have a strong direct effects with the overall perceived value construct.

In considering that the instrument is fairly recent, of course debate about its usefulness is expected both in the academic field and also among practitioners of e-business.

However authors such as ([1]; [34]; [6], [28]) confirmed that E-S-SQUAL in general is a useful instrument to evaluate e-service quality in a variety of situations.

### 3.4. Customer perceived value

Within the field of marketing, the construct of perceived value has been identified as one of the most important measures for gaining competitive edge. It has been argued to be the most important indicator of repurchase intentions [32]. [48] conceptualized perceived value as "the consumer's overall assessment of the utility of a product based on perceptions of what is received and what is given.

In the same line [13] define perceived value as "consumer perception of the net benefits obtained in exchange for the costs incurred to obtain the desired benefits".

According to [47]) "If consumer satisfaction measurement is not backed up with in depth learning about customer value and related problems that underlie their evaluations, it may not provide enough of the customer's voice to guide managers where to respond".

Thus since quality is defined to be the result of a customer's subjective evaluation of a company's product or service, most scholars regard quality as antecedent to perceived value and as a significant variable with strong influence on customers' natural

behavior ([34]; [6]; [28]). Moreover perceived value in e-service is an influential element in the future shopping intention, either as a consequence or moderator in the loyalty chain [32]. In the same line [19] confirmed that the dimensions which affect e-service quality have an indirect influence on perceived value. Hence if customers do not trust organizations within the context of process quality, their perceptions of value in doing business with the company will be weakened.

### 3.5. Customer loyalty

Customer loyalty is considered essential to business survival, especially in the context of e-commerce.

It was asserted that 5 percent improvement of customer retention can cause a profitability increase that ranges between 25 percent and 85 percent. In addition loyal customers are less likely to change provider because of price, while they also tend to recommend the business to others [37]. In addition it was emphasized that loyal customers make further purchases and generate positive word-of-mouth, in addition to a powerful influence on the behaviour of others [15]

In a fundamental contribution to the loyalty literature, there are many different approaches aiming at the definition and conceptualisation of loyalty. One approach regards loyalty in behavioural lens as "a customer who continues to buy" [7].

In the same line, [31] define customer loyalty as "a deeply held commitment to re-buy or repatronize a preferred product/service consistently in the future, thereby causing repetitive same-brand or same brand-set purchasing, despite situational influences and marketing efforts having the potential to cause switching behaviour". Whereas other approach is that there is an affective component to customer loyalty where feelings are important.

Thus loyalty is also examined under the attitudinal lens, which can be derived from psychological involvement, favouritism and a sense of goodwill towards a particular product or service [26].

In our context of e-banking, we adopt more specific definition which reflects both views, provided by [2], who define e-loyalty as "the customer's favourable attitude toward an electronic business, resulting in repeat purchasing behaviour". Some authors have emphasized the need to examine how to improve loyalty levels and the Internet consumer purchasing decision. Understanding these antecedents can help e-retailers gain competitive advantage by carrying out specific strategies to increase e-loyalty [41].

### 3.6. Service recovery

The study of service recovery has already received significant attention in the academic literature (e.g. [29]),

[42], [34]). Service recovery refers to the action taken by a service provider to address a customer complaint regarding a perceived service failure [16]. It is the process by which steps are taken as a result of negative customer perception of initial service delivery. Recovery management is considered to have a significant impact on customers who experienced service failures because they are usually more emotionally involved and observant of service recovery efforts [33].

Recovering service failure should not only address putting things right when they go wrong, but extend to preventing the error happening in the future [29]. Although service recovery has been described as a short-term activity that should, in the long term, be embedded within reliability. The argument that it forms a cornerstone of a customer satisfaction strategy [42] appears stronger when service recovery is considered within the context of customer satisfaction and loyalty.

In general, companies fare better in the eyes of consumers by avoiding service failure than by responding to failure with superior recovery. When the failure has occurred, customer loyalty is considered essential to business survival [33], especially in the context of e-commerce [37]. Since it is so expensive to retain and attract customers [41] and it is so easy to switch online [37].

#### 4. RESEARCH METHODOLOGY

The setting of our research was e-banking service in the region of Catalonia (Spain). Before the 90's some banks operations were limited to specific regions or provinces. After the barrier was lifted, except two savings banks that have branches all over the country, most of them are traditionally cramped to a specific region or province.

In addition Spanish banks in general are well regulated, but it is often said they have one of the highest ratios of branches per capita in Europe; over and above they have a tendency to be significantly overstaffed.

Spanish population is already involved in the Internet as a fortunate means of communication. 71.8% of the populations were internet users in December 2009. This was up by 440.0% compared to 2000 [21] and the region of Catalonia had one of the highest internet penetration rate 58.1% [21]. However the echelon of online banking penetration rate remains substantially lower compare to their western European counterpart.

Furthermore with 68,730 cumulated ISO 9001:2000/2008 certificates issues, Spain is ranked second in Europe after Italy and third worldwide after China and Italy [22].

Catalonia is the region that accumulates by far the highest number of companies certified in Spain. As

consequences of world financial crisis, Spanish government persuades banks in general and in particular those operating in Catalonia to merge in order to yield Spanish financial holdings that could adequately compete with foreign banks.

Hence great numbers of branches will close, giving way to online banking. Based on these facts, online banking in Catalonia constitutes a very interesting research field as banks need to implement strategies to satisfy and retain their existing profitable customers.

Therefore there is need exploring and fully understand how do customers judge the quality of online banking service after the implementation of ISO 9001:2008. As it may provide a useful thought to bank managers and support them in their aim to improve important e-service quality aspects in an attempt to expand the use of e-banking.

##### 4.1. Questionnaire design

Based on literature review, a structure questionnaire was designed by a blend of existing constructs. E-service quality was adapted from the original E-S-QUAL [34].

From the 22 items originally developed; the second, the four and the fifth item were removed as they evaluate "items available for delivery in a suitable time frame, accurate item order and having in stock what the company claim to have" all deemed not relevant for online banking by the authors. Hence only 19 items were adapted in this study.

The four e-service quality dimensions were: efficiency (8 items), system availability (4 items), fulfilment (4 items), and privacy (3 items).

They were reworded to fit in the context of online banking as suggested by [34] e.g. the word "delivers" was replaced by "performs" as shown in table 1.

The items used for perceived value and loyalty were also drawn from [34] and e-satisfaction was evaluated using a four items scale formerly used by [38] see table 2.

Finally the E-RecS-qual scale was also drawn from [34].

The first two items of the original responsiveness dimension and the second and third of compensation dimension were dropped because they had no sense at all for online banking.

This process yielded 7 items, as it is shown in table 3, covering three dimensions namely responsiveness (3 items), contact (1 item) and compensation (3 items). Since in the original E-S-QUAL all responses were measured using items recorded on five-point Likert-type scales with anchors of 1=strongly disagree and 5=strongly agree.

The same five-point Likert-type was adopted for the E-S-QUAL, Rec-S-Qual, as well as for perceived value, loyalty and e-satisfaction.

*Table 1 E-service quality fact*

<i>Efficiency</i>	
EFF1	It is easy to find what I need on my bank X web site
EFF2	It is easy to get anywhere on my bank X site
EFF3	My bank X enables me to complete a transaction quickly
EFF4	Information at this site is well organized.
EFF5	My bank X site loads its pages faster
EFF6	This site is simple to use.
EFF7	This site enables me to get on to it quickly.
EFF8	This site is well organized.
<i>System Availability</i>	
SAV1	This site is always available for business.
SAV2	This site launches and runs right away
SAV3	This site does not crash.
SAV4	Pages at my bank X site does not freeze after I enter my order information
<i>Fulfilment</i>	
FUL1	It performs orders when promised.
FUL2	It quickly delivers what I order.
FUL3	It is truthful about its offerings.
FUL4	It makes accurate promises about performance of online banking.
<i>Privacy</i>	
PRI1	My bank web site protect information about my online banking behaviour
PRI2	It does not share my personal information with other sites.
PRI3	My bank X site protects information about my credit and debit cards

*Table 2 Perceived value, loyalty intention and e-satisfaction factors*

<i>Perceived Value</i>	
PVA1	The prices of the services available at this site (how economical the site is).
PVA2	The overall convenience of using this site.
PVA3	The extent to which the site gives you a feeling of being in control.
PVA4	The overall value you get from this site for your money and effort.
<i>Loyalty Intentions</i>	
LOY1	Say positive things about this online banking site to other people.
LOY2	Recommend this online banking site to someone who seeks your advice.
LOY3	Encourage friends and others to do business with this site.
LOY4	Consider this online banking site to be your first choice for future transactions.
LOY5	Do more business with this site in the coming months.
<i>E-satisfaction (Ribbink, al 2005)</i>	
ESA1	I am generally pleased with Bank X's online services.
ESA2	The web site of this online bank X is enjoyable.
ESA3	I am very satisfied with this bank X's online services.
ESA4	I am happy with this online bank X.

Table 3 E-service recovery factors

<i>Responsiveness</i>	
RES1	This site offers a meaningful guarantee.
RES2	It tells me what to do if my transaction is not processed.
RES3	It takes care of problems promptly.
<i>Compensation</i>	
CPS1	This site compensates me for problems it creates.
<i>Contact</i>	
CON1	This site provides a telephone number to reach the company.
CON2	This site has customer service representatives available online.
CON3	It offers the ability to speak to a live person if there is a problem.

The survey was subdivided in four sections. The first section includes filter questions in order to seek only respondents who use internet to do their banking. In addition a list of banks was made available. Considering the possibility that respondents may have more than one online bank, they were asked to report the one they used on a regular basis. Section 2 contents demographic questions. Section 3 included items adapted from E-S-QUAL as well as items from perceived value, e-satisfaction and loyalty. Straight after a filter question seeking only those who experienced problems or needed help. Those who answer yes were directed to Section 4 that contained items of e-service recovery E-RecS-Qual.

The questionnaire was translated from the original English statement to Spanish and Catalan. A pilot test was conducted on a small group of 15 online banking customers from the university to check the content validity of the questionnaire in terms of ambiguity of wordings or misunderstanding of technical terms. All the respondents found most of the questionnaire items understandable. However some minor wording mistakes were found. Adjustment was made and the survey was translated from Spanish and Catalan to English to verify in the opposite direction the content validity.

#### 4.2. Sampling and data collection

The majority of banks in Catalonia provide online services that are available in Catalan, Spanish and very few in English. The survey was made available in three languages (Catalan, Spanish and English) and respondents were given a possibility to complete the survey in the language they understood the best. The sample was derived from a database maintained by Spanish banks. Online banking users were selected by choosing a random starting point and choosing every fiftieth individual customer in succession thereafter. This technique yielded 1,600 potential respondents, who were invited by email to participate in the survey and were directed to a specific website containing the structured questionnaire, which they then self-

administered. This approach was appraised appropriate in our context as it provides the dual benefit of accessing prospects from a broad range of backgrounds, as well as providing the captive audience for achieving a high response rate.

Most of banks in Spain as general information often published in their websites the International standards they implemented in their institution. Since the main interest of the study was to identified banks that implement ISO 9001 with the scope directly related to customers (offices, claims, etc.). A formal letter was sent to bank managers with a very short questionnaire included.

Data collection was completed in May 2010, a total of 20 banks were called to participate and 1200 questionnaires were dispatched to bank users. A response rate of 52% was recorded from bank users and 80% from bank managers. After rejecting some incomplete or invalid questionnaires, 16 banks were retained and 428 valid questionnaires remained from Spanish customers of e-bank, which include 123 of them who experienced problems with the service.

## 5. DATA ANALYSIS AND FINDINGS

### 5.1. Sample profile

Table 4 present a summarized sample's demographic characteristics and profile respondents per banks. 74% of the respondents filled the survey in Catalan since is the most spoken language in the region. As it can be seen in table 4, no gender bias was detected. Two thirds of the respondents were aged less than 34 years. The educational level of the sample was high, with more than two thirds of the sample having a university or a master degree. Overwhelming majority (65.9%) of the respondents earned less than € 24,000 annual incomes, two thirds used e-banking less than one week ago. Also the sample is skewed toward banks with

no ISO 9001(57.5%). 16% of our samples were “others”, referring to banks we were unable to outline the scope of the standard implemented.

Table 4 also shows characteristics demographics of the sub-sample of those clients who complained or experienced problems in the service received. It shows no gender bias detected, that half of the respondents were aged less than 34 and the educational level was high, with two thirds of the sub sample having a university or a master degree. A comparison of means among the two independent samples (those cases that have not reported any problems and those cases that reported a problem) was conducted using the

Wilcoxon–Mann–Whitney test. Four contrasts were assessed between the two groups assuming a null hypothesis that there was no difference of means between the groups. There were no differences detected neither in gender nor in educational level, but those who experienced problems are in the higher age categories and also with higher annual incomes.

Since most of banks in Spain are traditionally cramped to a specific region or province. The respondents’ profiles were comparable to the total population of the banks in the region of Catalonia. Thus the sample was not biased towards any of the banks.

Table 4: demographic characteristics of the response sample

	Complete sample			Sub sample of customer that have reported a problem	
		n	%	n	%
Gender	Female	225	52,6	62	50,4
	Male	203	47,4	61	49,6
Age	17-24	106	24,8	15	12,2
	25-34	150	35,0	48	39,0
	35-44	102	23,8	40	32,5
	45 and above	70	16,4	20	16,3
Education	College or institute diploma and below	102	23,8	35	28,5
	University degree	196	45,8	48	39,0
	Master degree and above	91	21,3	32	26,0
	Others	39	9,1	8	6,5
Annual income (€)	Less than 12,000	134	31,3	27	22,0
	12,001-24,000	148	34,6	44	35,8
	24,001 and above	146	34,1	52	42,3
Last use of e-banking	Less than 1 week	268	62,6	75	61,0
	Over 1 week - 1month	101	23,6	33	26,8
	1month and above	59	13,8	15	12,2
Respondents per banks with ISO or not	No ISO	246	57,5	67	54,5
	ISO	133	31,1	40	32,5
	Others	49	11,4	16	13,0
Customers who experienced any problem or needed help	No	305	71,3		
	Yes	123	28,7		

5.2. Findings

One way ANOVA was carried out instead of simple t-test because we can detect any interaction effects between variables, to examine comparison of means among the two independent samples (banks implementing ISO 9001 or not) based on: service quality, customer satisfaction and customer perceived

value, customer loyalty and customer service recovery. The theory acknowledged that means for two groups are significantly different from each other if F-distribution is greater than 1 or P-value is lower than 0.05. Findings: In general, excluding EFF5 (efficiency dimension) and PVA1 (perceived value) all the variables did not statistically reach the significance level. Hence we rejected Hypothesis H2, H3, H4, H6, H7, H8, H9, H10.

The next step was to assess in depth customers' level of discrimination on the two variables. .

Table 5 ANOVA analysis and Eta-value by ISO category

ISO_CAT		Sum of squares	Degree of freedom	Mean sum of square	F	Sig.	Eta	Eta squared
EFF5	Between	4,821	1	4,821	5,495	,020	,120	,014
	Within	330,767	377	,877				
	Total	335,588	378					
PVA1	Between	4,803	1	4,803	4,007	,046	,103	,011
	Within		377	1,198				
	Total	456,633	378					

Table 6 Means by ISO category

ISO_CAT		EFF5	PVA1
No ISO	Mean	3,94	3,31
	N	246	246
ISO	Mean	3,71	3,55
	N	133	133
Total	Mean	3,86	3,40
	N	379	379

We performed Eta-square correlation, which is an upwardly biased estimate of population strength of association between an independent variable and dependent variable, and it ranges in value from 0 to 1, to further explore the differences between the two groups see table 5. In addition we calculated the mean associated of the two groups see table 6. The results indicate that the differences between the two groups were not quiet significant as Eta values were very small. Consequently we partially rejected *Hypothesis* H1 and H5. However customers' from banks that do not implement ISO 9001 were more in favor that their "bank site loads its pages faster" and that "the prices of the services available on their bank site was more economical"

We carried out the same statistical analysis on the entire demographic variables to have a glimpse of customer perception of online banking in Catalonia. The results show absolutely no discrimination on education and annual income. On the other hand, the result of ANOVA test on gender indicates that: women have different view of EFF7, PRI1, PRI3, ESA1, ESA2, and CPS1 than men. In other words women were generally please with their online bank website, as they do not shows their online banking behavior as well as protecting information about their credit cards and debit cards. Moreover they were strictly very sensitive to the

compensation issues when the bank websites creates problems. In addition customers aged 17-24 enjoyed better their online banking website, whereas those aged 35-44 alleged the prices of the services available on their bank site were more economical. Furthermore the ANOVA test was also performed on the last usage of e-banking. Those who did their internet banking less than one week ago highly appraised almost all the dimension of service quality, perceived value, customer satisfaction, customer loyalty and service recovery with the highest Eta-value. Moreover they were very assure with the service recovery, as well as being generally satisfy with the overall service offer.

In addition they have an intension of being loyal to their online banking provider. Finally ISO certification was the lowest discrimination factor as the highest Eta value was .120. Whereas the last usage of online banking were enormously sensitive factors in e-service offered by banks with the highest Eta value .238 followed by gender .231 Additionally we plotted in the graph (Fig1) the average means of all the variables measured in this study in respect of bank using or not ISO 9001.

The results also confirm no difference in the levels of perception of e-service quality, perceived value, e-satisfaction, loyalty intension as well as all the variables from service recovery.



Fig 1: Comparison of average means

## 6. CONCLUSIONS

As we started to live in a virtual world where banks are becoming geographically afar from their customers, it is getting vital for the firms to create better quality of services, high customer perceived value and a better customer satisfaction, with an end to create service differentiation and build long term growth and profitability. One may say the effective provision of services depends on high quality and comprehensive standards. In this study, the main aim was finding out if the usage of ISO 9001:2008 with the scope directly related to customers (offices, claims, etc.) spawns any

discrepancies from customers' perspective in e-service setting. The general results reveal that online banking customers in Catalonia were not sensitive to the usage of ISO 9001 directly related to customers. In other words, ISO 9001 does not affect their perception of all constructs of customer loyalty and its antecedents as well as service recovery.

However, customers from banks that do not implement ISO 9001 were more in favor that their "bank site loads its pages faster" and that "the prices of the services available on their bank site was more economical". The logical explanation is that, Implementation of ISO 9001 imposes certain cost to the organization. Thus in one way or other customers are called to share the cost. The page loading is slower due to the excessive documentation needed by the ISO 9001 standard.

The non detection of any significant differences between banks certified and those not certified, may also be justified by the fact that: Generally customers' expectations are very high. Thus banks are well organized and structured and they offer a very high e-service standard. Furthermore, online banking bid to customers a complete control over their accounts; hence the absence of human interactions and physical premises may also shadow the perception of the benefits of ISO 9001.

## REFERENCES

- [1] Akinci, S., Atilgan-Ina, E. and Aksoy, S. (2010) "Re-assessment of E-S-Qual and E-RecS-Qual in a pure service setting" *Journal of Business Research*, 63, pp. 232–240
- [2] Anderson, E.W. and Sullivan, M.W. (1993), "The antecedents and consequences of customer satisfaction for firms", *Marketing Science*, Vol. 12 No. 2, pp. 125-43.
- [3] Al-Hawari, M., & Ward, T. (2006). The effect of automated service quality on Australian banks' financial performance and the mediating role of customer satisfaction. *Marketing Intelligence & Planning*, 24(2), 127 - 147.
- [4] Barrie G. Dale. Fourth Edition, *Managing Quality*. ; *Library of Congress Cataloging-in-Publication data managing Quality*. ISBN 0-631-23614-7
- [5] Bloemer, J., de Ruyter, K. and Wetzels, M. (1999), "Linking perceived service quality and service loyalty: a multi-dimensional perspective", *European Journal of Marketing*, Vol. 33 Nos 11/12, pp. 1082-107.
- [6] Boshoff, Christo (2007), "A psychometric assessment of E-S-QUAL: a scale to measure electronic service quality", *Journal of Electronic Commerce Research*, Vol. 8, No. 1, pp.101-114.
- [7] Buttle, F., & Burton, J. (2002). Does service failure influence customer loyalty? *Journal of Consumer Behavior*, 1(3), 217–227.
- [8] Casadesus, M; Giménez Gerusa and Iñaki Heras, Benefits of ISO 9000 Implementation in Spanish industry, *European Business Review*, Volume 13. Number 6. 2001. pp. 327-335
- [9] Casadesus, M., & Karapetrovic, S. (2005). The erosion of ISO 9000 benefits: A temporal study. *International Journal of Quality & Reliability Management*, 22, 120–136.
- [10] Cristobal, E., Flavian, C., & Guinaliu, M. (2007). Perceived e-service quality (PeSQ): Measurement validation and effects on consumer satisfaction and web site loyalty. *Managing Service Quality*, 17(3), 317 - 340.
- [11] Egan, J. (2004), *Relationship Marketing: Exploring Relational Strategies in Marketing*, Pearson Education, Harlow.

- [12] Fornell, C. (1992), "A national customer satisfaction barometer", *Journal of Marketing*, Vol. 56 No. 1, pp. 6-21.
- [13] Fuentes-Blasco, M.; Gil-Saura, I.; Berenguer-Contrí, G. & Moliner-Velázquez, B. (2010). "Measuring the antecedents of e-loyalty and the effect of switching costs on website", *The Service Industries Journal*, in press, DOI: 10.1080/02642060802626774.
- [14] Goode, M. M., Moutinho, L. A., & Chien, C. (1996). Structural equation modelling of overall satisfaction and full use of services for ATMs. *International Journal of Bank Marketing*, 14(7), 4 - 11.
- [15] Gremler, D. and Brown, S. (1999), "The loyalty ripple effect: appreciating the full value of customers", *International Journal of Service Industry Management*, Vol. 10 No. 3, pp. 271-91.
- [16] Grönroos, C. (1988), "Service quality: the six criteria of good perceived service", *Review of Business*, Vol. 9, Winter, pp. 10-30.
- [17] Harris, M. and Harrington, H.J. (2000), "Service quality in the knowledge age – huge opportunities for the twenty first century", *Measuring Business Excellence*, Vol. 4 No. 4, pp. 31-6.
- [18] Guo, X., Duff, A., & Hair, M. (2008). Service quality measurement in the Chinese corporate banking market. *International Journal of Bank Marketing*, 26(5), 305 - 327.
- [19] Heinonen, K. (2004). Reconceptualizing customer perceived value: The value of time and place. *Managing Service Quality*, 14(2/3), 205–215.
- [20] Iñaki Heras Saizarbitoria (2006). ISO 9000, ISO 14001 y Otros Stándares De Gestión: Pasado, Presente y Fuuro. Editorial Aranzadi S.A. ISBN: 84-470-2686-8
- [21] Internet World Stats, April 2010: <http://www.internetworldstats.com/stats4.htm#europe>
- [22] Asociación para la Investigación de Medios de Comunicación, March 2010 – (AIMC): <http://download.aimc.es/aimc/03internet/internet110.pdf>
- [23] ISO SURVEY 2008/Survey 2008 ISO (E)/core/iso\_9001/iso\_9001\_wr.html
- [24] Jones, R., Arndt, G. and Kustin, R.(1997), "ISO 9000 among Australian companies: impact of time and reasons for seeking certification on perceptions of benefits received", *International Journal of Quality & Reliability Management*, Vol.15 No.2, pp. 162-6
- [25] Kettinger, W.K. and Lee, C.C. (1997), "Pragmatic perspectives on the measurement of information systems service quality", *MIS Quarterly*, Vol. 21 No. 2, pp. 223-40.
- [26] Kim, M., Kim, J-H., & Lennon, S.J. (2006). Online service attributes available on apparel retail web sites: An E-S-QUAL approach. *Managing Service Quality*, 16(1), 51–77.
- [27] Kotler, P. (2003). *Marketing Management*, Prentice-Hall, Englewood Cliffs, NJ.
- [28] Marimon, F.; Vidgen, R.; Barnes, S.; Cristobal, E., 2010, "Purchasing behaviour in an online supermarket: the applicability of E-S-QUAL" , *International Journal of Market Research*, 52, nº 1, 111-129
- [29] McCoUough, Michael A., Leonard L. Berry, Manjit Yadav (2000) "An empirical investigation of customer satisfaction after service failure and recovery" *Service Research* Vol. 3, n. 2. Pp. 121-137.
- [30] Meng, Juan, (2010): "Measurement Equivalency of Web Service Quality Instruments: A Test on Chinese and African American Consumers" *Journal of International Consumer Marketing*, 1528-7068, Volume 22, Issue 3, 2010, Pages 259 – 269
- [31] Oliver, R.L. (1999), "Whence customer loyalty?", *Journal of Marketing*, Vol. 63 No. 4, pp. 33 44.
- [32] Parasuraman, A., and D. Grewal (2000). "The Impact of Technology on the Quality-Value-Loyalty Chain:A Research Agenda." *Journal of the Academy of Marketing Science*, 28 (1):168-74.
- [33] Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). SERVQUAL: A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality. *Journal of Retailing*, 64(1), 12-40.
- [34] Parasuraman, A., Zeithaml, V. A., & Malhotra, A. (2005). E-S-QUAL: A Multiple-Item Scale for Assessing Electronic Service Quality. *Journal of Service Research*, 7(3), 213-233.
- [35] Quazi, H.A and Padibjo, S.R. (1998), "A journey towards total quality management through ISO 9000 certification: a study on small and medium sized enterprises in Singapore" *International Journal of Quality & Reliability Management*, vol.15 No.5 pp. 364-71
- [36] Qimei Chen, Rodgers, S., & Yi He. (2008). A Critical Review of the E-Satisfaction Literature. *American Behavioral Scientist*, 52(1), 38-59.
- [37] Reichheld, F.F., & Schefter, P. (2000). E-loyalty: Your secret weapon on the web. *Harvard Business Review*, 87(4), 105–113.
- [38] Ribbink, D., van Riel,, A. and Streukens, S. (2004), "Comfort your online customer: quality, trust and loyalty on the internet", *Managing Service Quality*, Vol. 14, No. 6, pp. 446-456.
- [39] Sahadev, S., & Purani, K. (2008). Modelling the consequences of e-service quality. *Marketing Intelligence & Planning*, 26(6), 605 - 620.
- [40] Santos, J. (2003), "E-service quality: a model of virtual service quality dimensions", *Management Service Quality*, Vol. 13 No. 3, pp. 233-46.

- [41] Srinivasan, S., Anderson, R., & Ponnnavolu, K. (2002). Customer loyalty in e-commerce: An exploration of its antecedents and consequences. *Journal of Retailing*, 78(1), 41–50.
- [42] Tax, Stephen Saul, Stephen W. Brown, Murali Chandrashekar. 1998. Customer evaluations of service complaint experiences: Implications for relationship marketing. *Marketing* 62(2) 60-76.
- [43] Tsiotras, G. and Gotzamani, K.(1996), “ISO 9000 as an entry key to TQM: the case of Greek industry” *International journal of Quality*, Vol.13 No.4.
- [44] Tsuang Kuo, Tsung-Jin Chang, Kuei-chung and Ming-yuan Lin (2009). Employees’ perspective on the effectiveness of ISO 9000 Certification: A Total Quality Management framework. *Journal Total Quality Management*, vol. 20, No.12, December 2009, 1321-1335
- [45] Vloegeberghs, D. and Bellens, J.(1996), “implementing the ISO 9000 standards” *Quality Progress*, Vol.29 No.6, pp.43-8
- [46] Wong, D. H., Rexha, N., & Phau, I. (2008). Re-examining traditional service quality in an e-banking era. *International Journal of Bank Marketing*, 26(7), 526 - 545.
- [47] Woodruff, R. B. (1997). “Customer Value:The Next Source for Competitive Edge.” *Journal of the Academy of Marketing Science*, 25 (2): 139-53.
- [48] Zeithaml, V. A., Parasuraman, A., & Malhotra, A. (2002). Service Quality Delivery through Web Sites: A Critical Review of Extant Knowledge. *Journal of the Academy of Marketing Science*, 30(4), 362-375.

Received: 15.06.2011

Accepted: 18.11.2011

Open for discussion: 1 Year