

Second World Conference on POM and 15<sup>th</sup> Annual POM Conference  
Cancun, Mexico, April 30 – May 3, 2004

**THE ROLE OF EXTERNAL CONSULTANCY IN QUALITY MANAGEMENT:  
RESULTS OF AN EMPIRICAL STUDY IN SPAIN AND PORTUGAL**

**Fernández-González, Arturo José  
Prado Prado, José Carlos**

ajfdez@uvigo.es, jcprado@uvigo.es  
School of Industrial Engineers, University of Vigo  
Lagoas-Marcosende, 9 – 36200 Vigo (Pontevedra), Spain  
Phone: (+34) 986812220, Fax: (+34) 986812385

**ABSTRACT**

This paper analyzes the role of external consultancy in quality management. The authors' results come from an empirical study carried out on a sample of 305 Spanish and Portuguese companies (by means of personal interviews with quality managers). Several aspects are studied: the widespread use of quality consultants by the companies involved in the ISO 9000 implementation and certification process (about 90% of them, surpassing all the levels previously registered in empirical literature) and its utility; the consultancy use in the post-certification period and in the transition process to ISO 9001:2000; and the influence of consultancy use in the results of quality management practices within the ISO 9000 frame. Finally, some conclusions and recommendations about consultancy contracting, especially oriented to SME's, are presented.

Keywords: quality consultancy, quality management, ISO 9000

**1. INTRODUCTION**

The use of external consultancy in quality management is a resource habitually used by companies, especially when tackling the ISO 9000 process, and more so in the case of SMEs.

In many instances, mainly in the case of SMEs, the external advisers do not only carry out the work of aid or support in the tasks of training, sensitization and orientation of the implementation of the quality management system, rather they become an authentic added element of the organizational structure for the quality management in the company, for a period of time that can end with certification or extend subsequently.

In the particular case of the ISO 9000 process, the reasons for which companies go to external consultancy are various: necessity to interpret the standard due to its not very friendly user language; confused structure of the standards; a coercive attitude by the clients and the administration; limitation of resources, which includes time and personnel available for the project, and the “it’s easier if somebody else does that” perception (Karapetrovic, 1999, p. 113). Another very important factor is to be able to implement the system, and generally, to certify it, in the least possible time. (Gustafsson et al., 2001). In addition, the training given by external personnel is usually better appreciated by the personnel of the companies than that given by its own personnel (De Benito, 1998; Gustafsson et al., 2001). A study of 77 companies and 22 Spanish consultants revealed that the participation of external consultants in the companies was considered crucial in the stages of diagnosis and implementation, although not so important at the certification stage (Martínez-Fuentes et al., 2000).

Nevertheless, empirical literature has hardly analyzed in a scientific way the quality of the services given by consultants of quality management, nor its real contribution to the improvement of quality management in its clients companies. We have only been able to find one study dedicated specifically to it, which was carried out on a sample of 65 companies in Catalonia, Spain (Casadesús et al., 2002; Marimon et al., 2002, 2003), in addition to brief treatments of the issue in the works of Taylor (1995a), Carlsson and Carlsson (1996), Huarng

(1998) and Lipovatz et al. (1999). The study carried out in those 65 firms shows, amongst other results, that large consultancy companies (more than 50 professionals) give a better service than the smaller ones, and that independent or freelance professionals dedicated to consultancy activities are almost as highly valued as the large consultancy companies. The worst thing valued by the client companies is the adjustment to the established terms to finalize the process. Significant results related to the size of the client company were not obtained.

It is more common in empirical literature to mention only the percentage of use of external consultancy by the studied companies and some observations on the utility or satisfaction of the companies with the consulting services, as shall be seen further on. Table 1 gathers the most relevant investigations in which it has been possible to find some mention on the percentage of use.

Empirical study	Percentage of use of external consultancy	Reference
106 companies certified in the province of Alicante (Spain)	80%	Llopis and Tarí (2003)
288 companies certified in Catalonia (Spain)	Over 80%	Casadesús and Giménez (2001)
403 companies in Sweden	15%	Gustafsson et al. (2001)
111 companies in Greece	“three quarters”, although it reaches 80% among manufacturers and descends to 41% among those belonging to services	Lipovatz et al. (1999)
88 companies in Thailand	15%	Krasachol et al. (1998)
SMEs in Australia (undetermined number)	50% aprox.	Mo and Chan (1997)
160 companies in west Australia (91% SMEs)	“a relatively high percentage”	Van der Wiele and Brown (1997)
115 companies certified in Northern Ireland	82%	Taylor (1995b)

Table 1. Percentages of use of external consultancy in several empirical studies

As to the costs of the services of consultancy in quality, the empirical literature presents various results: Van der Wiele and Brown (1997) refers to in their study of 160 Australian companies that, although many of these companies considered the cost of the consultancy “prohibitive” (p. S301), they decided to contract them due to the pressure to obtain the certificate, combined with

the lack of knowledge and time. However, the companies of the aforementioned study by Casadesús et al. (2002) consider it, in general, economic (they valued it at a 48% average of the total cost of the ISO 9000 process until certification). The difference in dates must be taken into account (in addition to geographical zones), with the progressive reduction of prices of these services, a result of the increase of offer on the market.

Once the services of external consultancy have been hired in the ISO 9000 process, the empirical literature permits us to notice that all manners of experiences exist, both positive and negative.

On the more positive side, the results from Casadesús et al. (2002) can be placed. The companies of this study considered in general, satisfactory the experience of working with consultants, to the extent that a high percentage of the companies (55%) continued using the same consultant's services after obtaining the certification, and a 77% of those who foresaw using consultancy in the process of adaptation to the new ISO 9001:2000 (a 67% of the total) would do so with the same advisers. Nevertheless, the study also reveals that initial expectations in relation to the quality of the consultancy service were greater than the actual satisfaction obtained, which evidences real possibilities of improvement, and that the impact of the use of consultancy on economic results is scarce (Marimon et al., 2003).

On the other hand, in Coleman's and Douglas' study (2003) of 80 British companies, the quality of external consultancy was found to be in general satisfactory: 46% qualified it as good or very good, 46% satisfactory, and 8% poor.

However, the references of a negative type with respect to the performance of external consultants are more numerous.

Taylor (1995a) found, in a study of 682 Irish companies, that the hiring of external assistance does not significantly influence the understanding of the purpose of ISO 9000 by the companies'

directors. In addition, the understanding of ISO 9000 among the 115 certified companies turned out to be worse for SMEs than in large companies (Taylor, 1995b), for which the author encouraged an investigation to see if the cause of this problem rests on the cutting of prices by the consultants when they work for SMEs, or if the consultants with experience in large companies have difficulties in adapting their services to small companies, or if simply the directors of small companies have less time to think, being busier on operational points.

Mo and Chan (1997), in a study carried out among Australian SMEs, observed that not all those that hired external consultants (approximately half) showed satisfaction with the performance of these consultants, considering them costly and not always useful.

Other studies reach more conclusive results, such as that of Carlsson and Carlsson (1996), which in a study of a hundred Swedish companies found a negative influence in the process, although without a clear consensus among them in relation to this subject.

In Van der Wiele and Brown's (1997) study of 160 certified companies from the West of Australia, the majority SMEs, a good number of them manifested criticisms of the consultant's role: lack of knowledge of the problems of certain sectors, promotion of an excessive documentation of the system, or different interpretations of the requirements of the standards.

In Lipovatz's et al. (1999) investigation, of 111 Greek companies, three quarters of those questioned used the services of external consultants in the process of ISO 9000, and 70% considered it important. Nevertheless, this value went down to 47% in multinationals (since they usually have internally capacitated personnel). Also, the authors found a significant correlation between the presence of external consultants and the appearance of negative reactions on behalf of the personnel and middle management. There also existed a correlation between the aforementioned presence of consultants and the appearance of problems of excess of

bureaucracy. All this reinforces the results of Carlsson and Carlsson (1996) in Sweden, and leads to the conclusion that many times external consultants are seen as a “foreign body” by part of the organization, and that they do not make suitable the documentation and the implementation of the system to the companies’ individual characteristics, which makes for the creation of a more bureaucratic system and bears negatively on the support, participation and involvement of personnel (Lipovatz et al., 1999).

Huang (1998), in a study of 370 companies in Taiwan, verified that the SMEs obtained less improvement in quality when they left their quality systems to depend strongly on external consultancy.

Several authors have tried to explain the causes of these results. Following Karapetrovic (1999), the fundamental problem of the use of consultancy is that, in general, the consultants tend to use what we could call “ready-made packages” of implementation, which includes formative sessions, documentation models, software, methodology of internal audits, etc. That is to say, the consultants act in a predetermined way, with scarce capacity of adaptation to the reality of the company that hires them.

Also, the problems that some organizations have with consultants can be due to, at least in part, the lack of quality or competence of some of them. Companies, especially SMEs, do not usually have much judgement in selecting and hiring a consultant when initiating the ISO 9000 process, or, in general, when it concerns implementing or improving their practices of quality management. It must be taken into account that a great part of the companies that initiate the ISO 9000 process do so with great ignorance of the subject, which puts them at the mercy of consultants that know how to gain their trust by good commercial work, or those that offer more competitive prices.

Nevertheless, for Gustafsson et al. (2001), in the light of the results of their study among 403 Swedish companies, the use of consultancy is expensive, but to bear the ISO 9000 process proves to be more expensive without external help. But putting all the weight or the majority of it onto consultants must be avoided, since once they abandon the company, once the process has finalised, they leave with the “know-how”. De Benito (1998) distinguishes two types of consultant, both with advantages and inconveniences:

?? The “theorist” consultant, who usually takes more care of formative aspects and provides a standard methodology which will be carried out in detail by the personnel of the company. They tend to be “brilliant” and convincing, but less practical.

?? The “practical” consultant, who usually assumes the programme of development and implementation of the system like a director of the company and who gets involved directly, taking part in all the activities, both those of training and sensitization and those of wording and implementation. The inconvenience is that it tends to generate certain dependency, which could impede the company following its’ own path alone.

Huang (1998), in a study in Taiwan, verified that many companies abandon their system of quality management once the consultants have gone. This dependency on external consultancy is one of the most important inconveniences that can be generated by its hiring.

The empirical literature demonstrates, therefore, that the use of external consultancy presents pros and cons. In this work we intend to enlarge the existing knowledge on the subject, presenting the findings of an empirical investigation on quality management which it has dealt with, and among other subjects, the use of external consultancy, and to offer some recommendations that may be helpful to managers and directors.

## **2. AN EMPIRICAL STUDY IN THE NORTH OF SPAIN AND PORTUGAL**

Between the months of June 2002 and March 2003 an empirical investigation was carried out on 305 companies, certified ISO 9000, in the regions of Galicia (Northwest of Spain) and the North of Portugal. The object of the investigation, developed by a team from the School of Industrial Engineers from the University of Vigo, was to know the present-day situation and future perspectives in quality management of these companies. The role of the external consultancy in quality management was one of the aspects considered in the investigation.

The increasing prominence and importance of the economic activity in this European area, both within the two regions which form it, as well as the trans-frontier relation between them both and, by extension, that of Spain and Portugal, were considered reasons more than enough to justify the carrying out of this study. Also, it is a pioneering work and, therefore, innovating, in the improvement of the knowledge of the social-economic structure of the area.

Below, some basic data on the methodology used, the typology of the companies of the sample investigated, and the main results obtained, will be presented.

### *2.1 Methodology used and typology of the sample*

The empirical study was carried out on a sample of 305, ISO 9000 certified companies, of 10 or more workers, which belonged to the industrial and services sectors, including construction.

The following conditions were imposed:

- ?? the companies should have been certified before 30<sup>th</sup> June 2001, in order to guarantee a certain level of maturity of its quality management system;
- ?? they should be located (at least one plant) at the given territory (regardless of its nationality);

?? they should have autonomy in quality management (that is to say, they do not totally depend on the directives of a person responsible or central department located outside the area).

After a preliminary inventory carried out by the investigating team, the certified companies which fulfilled these conditions turned out to be a total of 1,675 (1,001 in Galicia and 674 in the North of Portugal). Different sources were consulted, such as certifying entities which operate in the area and other secondary sources of information.

The companies to be interviewed were selected in a totally random way. The 305 companies finally interviewed were nearly 20% of the total, and constitute a representative sample with a sample error of 5.18% at a 95.5% confidence level and  $p=q=0.5$ .

The collection of data was carried out by personal interviews to those responsible of quality management in the companies. An appointment for each personal interview was made by telephone, after having sent a letter of presentation of the study. The successful rate of the aforementioned contacts was 82.9% (the percentage of companies that agreed to the interview from amongst those that fulfilled the aforementioned conditions, after confirmation by telephone).

Table 2 shows the basic typology of the companies interviewed. The European Union's definition of SMEs (1996) has been used: less than 250 workers and up to 40 million euros of sales. The companies that carry out either productive activities or services have been classified within the sector which gives them bigger invoicing, according to those responsible who were interviewed. Construction companies have been included within the companies of utilities.

Geographically, of the 305 companies, 205 belong to the territory of Galicia, and 100 to the North of Portugal. By sectors, following the NACE classification, the official in the European

Union, and based on the International Standard Industrial Classification of all Economic Activities (ISIC) of the UN, the division is as shown in Figure 1.

Type	Production	Services	Total
SMEs	152	101	253
Large	35	17	52
Total	187	118	305

Table 2. Basic typology of the companies of the sample

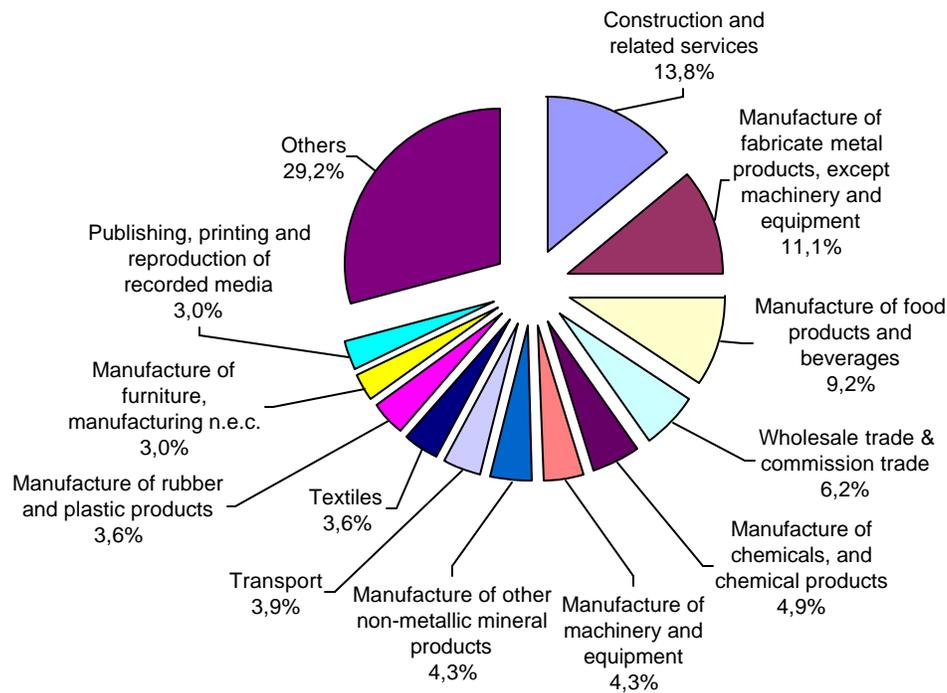


Figure 1. Companies of the sample classified by the NACE sector of activity

In Table 3 companies are classified according to their sales number and size of their workforce (data from 2001).

The mean sales number of the companies interviewed reaches 18.65 million euros (6.91 million euros among SMEs, and 77.61 million euros among the large companies). The average workforce is of 116.8 workers (58.3 in SMEs and 405.0 in large companies). The Portuguese companies are, on average, of a bigger size: their average workforce reaches 165.2 workers

(against 93.6 in Galicia) and their mean sales number rises to 20.65 million euros (against 17.82 in Galicia).

Sales number in 2001 (millions of euros)	No. of companies	No. of workers		No. of companies
		Small	Medium	
Less than 1	20 (6.6%)	10-49	152 (49.8%)	
Equal or more than 1 and less than 3	66 (21.6%)	50-99	57 (18.7%)	
Equal or more than 3 and less than 6	62 (20.3%)	100-249	58 (19.0%)	
Equal or more than 6 and less than 25	82 (26.9%)	250-499	26 (8.5%)	
Equal or more than 25 and less than 40	22 (7.2%)	500-999	4 (1.3%)	
Equal or more than 40	31 (10.2%)	1.000-2.499	4 (1.3%)	
Unknown	22 (7.2%)	2.500 or more	1 (0.3%)	
Total	305	Do not know/do not answer	3 (1.0%)	

Table 3. Distribution of the sample companies according to sales number and size of workforce

The tendency of the sales and the benefits of the last three years are by majority increasing. 15.7% belongs to a multinational group, and a similar percentage to national group's correspondent to each country.

Finally, Table 4 shows the distribution of the companies by standards followed in the certification (at the time of carrying out each interview).

Standard	No. of companies
ISO 9001:1994	38 (12.5%)
ISO 9001:2000	59 (19.3%)
ISO 9002:1994	208 (68.2%)
ISO 9003:1994	0 (0.0%)
Total	305

Table 4. Distribution of the companies by standards followed in the certification

## 2.2 Results

The use that the companies studied have made of external consultancy shall be analysed in this epigraph, both during the ISO 9000 process and at present.

### *Use of support consultancy during the implementation of ISO 9000*

86.6% of the companies used consultancy's support during the implementation of the quality management system according to ISO 9000, while another 11.4% carried out the process until the certification without external help (the remaining 4% do not know or do not remember). Table 5 shows this data, which shows that the vast majority of companies have resorted to external consultancy services in order to implant ISO 9000. Especially significant is the case of the SMEs, where 92.45% of them have resorted to this help while among large companies this percentage is 69.4%.

	No. answers	Consultancy used
SMEs	250	231 (92.4%)
Large	49	34 (69.4%)
Production	183	161 (88.0%)
Services	116	104 (89.7%)
Galicia (Spain)	202	180 (89.1%)
N. Portugal	97	85 (87.6%)
Total	299	265 (88.6%)

Table 5. Use of consultancy support during the implementation ISO 9000

The utility of consultancy support in the ISO 9000 process until certification is valued by the companies of the study with a 4.52 average in a 1-5 Likert's scale (1 being very low, 5 being very high utility). Table 6 shows the distribution of answers in this respect, as well as the results of the Student's T-test performed at a 95% confidence level, to compare the mean values obtained.

It is necessary to highlight that the companies from the North of Portugal grant a significantly superior usefulness to consultancy support in the implementation than that conceded by Spanish companies. Among SMEs and large companies, the differences are noticeable, although they are not statistically significant ( $p=0.064$ ). Among productive companies and those of services there are no significant differences.

	No. answers	Mean value	T-test	
			t	p
SMEs	218	4.29	1.862	0.064
Large	32	3.94		
Production	153	4.22	-0.503	0.615
Services	97	4.29		
Galicia (Spain)	167	4.16	-2.052	0.041*
N. Portugal	83	4.43		
Total	250	4.25		

Table 6. Usefulness of consultancy support during the implementation of ISO 9000 (\*: significant difference at a 95% confidence level)

*The influence of external consultancy in the documentation of the quality management system*

An interesting issue is the role played by external consultancy in the creation of the documentation of the quality management system. Many times the consultants have been “accused” of developing “prefabricated” documental systems, instead of conveniently adapting them to the reality of each company, just as authors like Karapetrovic (1999) point out.

Amongst the answers obtained in this investigation, this accusation has appeared in some cases, although it has not been habitual. On some occasions, the bureaucratization is more due to the requirements of the certifying entity (the cliché of “working for the auditor”).

With the quantitative data of this investigation, the possible influence of the use of consultancy in three aspects related with the quality of the documentation was analysed:

?? The possible excess in the quantity of developed documentation. Companies were asked to indicate if they considered the documentation that they had at the time of the interview was excessive for the needs of their quality management system.

?? The quality of the contents. Companies were asked for an evaluation on a 1-5 Likert’s scale, 1 being “very low” and 5 being “very high”.

?? The functionality or facility of use. A similar evaluation as the previous one was requested of the companies.

If the results obtained by the companies that used external consultancy are compared with those that did not during the implementation of the system, performing the Student's Ttest (at a 95% confidence level), the results in Table 7 are obtained.

Results	With external consultancy		Without external consultancy		T-test	
	n	Cases	n	Cases	t	p
Excess of documentation	263	95 (36.1%)	34	15 (44.1%)	-0.907	0.365
	n	Mean value	n	Mean value	t	p
Quality of contents	264	4.12	32	4.19	-0.459	0.647
Functionality/facility of use	264	4.11	33	4.09	0.141	0.888

Table 7. Quality of the documentation of the system in terms of the use of external consultancy during the implementation

It can be observed in all of them that  $p > 0.05$ , for which the data do not allow the extraction of clear conclusions regarding the influence that the use of external consultants can have in the development of a better or worse documentation of the quality management system. Nevertheless, a slightly higher evaluation in the quality of the documentation is observed amongst the companies that did not use consultancy, even though the percentage of companies that consider they have developed excess documentation is also higher amongst these. As to the functionality/facility of use, hardly any differences are noticed.

#### *Use of support consultancy at present*

During the phase of carrying out this study, 53.5% of the companies interviewed had access to external support at least in some aspect or related activity with quality management. The existing differences in this aspect amongst SMEs, which surpass 56%, and large companies, which hardly surpass 37%, are important. Something similar occurs with companies from the North of

Portugal, which surpass 63%, and the Spanish companies in the sample, which remain at 48.5%. Of the companies that at present have external support in quality management 96.3% has already used consultancy in the ISO 9000 implementation, whilst the remaining 3.8% (11.1% amongst the large companies) use them at present not having done so during the implementation. Table 8 shows these results.

	No. answers	Cases with external support at present	Of them		
			No. answers	Cases which continue using external support	Cases with external support at present but not during the implementation process
SMEs	252	143 (56.7%)	142	138 (97.2%)	4 (2.8%)
Large	51	19 (37.3%)	18	16 (88.9%)	2 (11.1%)
Production	186	99 (53.2%)	97	94 (96.9%)	3 (3.1%)
Services	117	63 (53.8%)	63	60 (95.2%)	3 (4.8%)
Galicia (Spain)	204	99 (48.5%)	98	95 (96.9%)	3 (3.1%)
N. Portugal	99	63 (63.6%)	62	59 (95.2%)	3 (4.8%)
Total	303	162 (53.5%)	160	154 (96.3%)	6 (3.8%)

Table 8 Present-day situation of the use of consultancy in quality management

In the 162 companies that use support consultancy at the present moment, the activities or tasks which require these external services are as shown in Table 9.

Activities	No. answers
Internal audits	80 (49.4%)
Transition to ISO 9001:2000	69 (42.6%)
Various improving activities	26 (16.0%)
Preparation of external audits	12 (7.4%)
Training and sensitization	5 (3.1%)
Maintenance of the system	4 (2.5%)
Documentation	4 (2.5%)
Environmental management	4 (2.5%)
Tracking	4 (2.5%)
Implementation of TS 16949	2 (1.2%)
EFQM Model	1 (0.6%)
Do not know/Do not answer	14 (8.6%)

Table 9. Activities for which external consultancy in quality are used

As can be observed, the actual activities most requested from the external consultants are the carrying out of internal audits (49.4%) and help in the transitional process to the new standard

ISO 9001:2000 (42.6%), followed by a long distance by the preparation of the external audits of the system (7.4%). Other 16.0% affirm using these services for other improving activities in general.

The degree of present-day satisfaction of the companies with their quality consultants reaches the mean value of 4.26. The answers are shown in Table 10, in which are also included the results of the T-test performed at a 95% confidence level.

	No. answers	Mean value	T-test	
			t	p
SMEs	140	4.24	-0.597	0.551
Large	19	4.37		
Production	98	4.32	1.089	0.278
Services	61	4.16		
Galicia (Spain)	96	4.15	-2.225	0.028*
N. Portugal	63	4.43		
Total	159	4.26		

Table 10. Degree of satisfaction with current consultancy (\*: significant difference at a 95% confidence level)

Looking at Table 10 we can say that the large companies and those of production are slightly more satisfied with their present quality consultants than the SMEs and services companies, respectively. The difference is more manifest, and statistically significant, amongst the companies of Galicia and those from the North of Portugal ( $p=0.028$ ).

#### *Use of consultancy in the transition to ISO 9001:2000*

Some aspects also directly related to the use of consultancy in the transition process to ISO 9001:2000 have also been studied. The results are shown in Table 11.

On the one hand, the use of consultancy in the transition process to ISO 9001:2000 had been, was being or was foreseen as being used, by 70.1% of SMEs, and by 45.5% of large companies, during the period of carrying out this study. This means that the use of consultancy for this

purpose is minor than the first ISO 9000 process, although it can still be considered high, especially considering that the companies already have experience derived from the first process and the amount of time that they have been certified ISO 9000. The Portuguese companies show a higher dependence on external consultancy or more confidence in them (79.8% against 59.2% Spanish companies), even though in the first implementation both presented similar levels of use of consultancy (close to 90%).

	No. answers	Used/use/foresee using consultancy in the transition to ISO 9000:2000	Did not use/ do not use/ do not foresee using consultancy in the transition to ISO 9000:2000	No. answers	In the event of having used consultancy and using it again in the transition to ISO 9000:2000, they repeated with the same consulting company
SMEs	214	150 (70.1%)	64 (29.9%)	136	95 (69.9%)
Large	44	20 (45.5%)	24 (54.5%)	16	11 (68.8%)
Production	160	105 (65.6%)	55 (34.4%)	94	67 (71.3%)
Services	98	65 (66.3%)	33 (33.7%)	58	39 (67.2%)
Galicia (Spain)	174	103 (59.2%)	71 (40.8%)	93	69 (74.2%)
N. Portugal	84	67 (79.8%)	17 (20.2%)	59	37 (62.7%)
Total	258	170 (65.9%)	88 (34.1%)	152	106 (69.7%)

Table 11. The use of consultancy in the transition to ISO 9001:2000

On the other hand, there is no doubt that a good indicator of the level of satisfaction of the companies with the consultancy in quality management that they have hired during the ISO 9000 process is the companies' intention of continuing with the same consultants in the transition to ISO 9001:2000. Hence the reason why this question was included in the investigation, finding that the companies that used consultancy in the first implementation, and who have again used the same consulting entity, or are doing so or who foresee doing so in the transition, involve a 69.7%, as is also shown in Table 11. That is, over two thirds of the companies renew their confidence in their ISO 9000 consultants.

### *Influences of the use of external consultancy on the results of the ISO 9000 process*

With the data of this investigation, the possible influence of the use of external consultancy in a set of results of the process of development, implementation, certification and subsequent maintenance of the quality management system have been studied.

The results considered are the following:

- 1) Contribution of the ISO 9000 process in the improvement of competitiveness.
- 2) Contribution of ISO 9000 in the improvement of clients' satisfaction.
- 3) Contribution of ISO 9000 in continuous improvement.
- 4) Contribution of ISO 9000 in the improvement of workers' satisfaction.
- 5) Sensitization of senior management towards quality.
- 6) Sensitization of middle management towards quality.
- 7) Sensitization of operative personnel towards quality.
- 8) Satisfaction of the person responsible/department of quality management.
- 9) Fulfilment of the objectives of quality management.

The interviewee's evaluations have been based on a 1-5 Likert's scale, 1 being "very low" or "very poor", and 5 being "very high" or "very strong". These evaluations have been carried out in a totally independent way (and at different moments of the interview) from the answers about the use of consultancy, both during the implementation of ISO 9000 and at the present time.

The method used for the identification of statistically significant differences has been the Student's T-test at a 95% confidence level. A difference has been made between the use of consultancy during the implementation of ISO 9000 (until certification) and the present use, subsequent to certification. The findings of the investigation, which are shown in Table 12, are commented below.

Results	Consultancy in implementation of ISO 9000						Consultancy after ISO 9000 certification					
	With		Without		T-test		With		Without		T-test	
	n	Value	n	Value	t	p	n	Value	n	Value	t	p
Contribution of ISO 9000 to the improvement of competitiveness	261	3.44	34	3.44	-0.022	0.983	159	3.56	140	3.31	1.972	0.050*
Contribution of ISO 9000 to continuous improvement	255	3.60	34	3.21	1.933	0.054	158	3.70	134	3.37	2.533	0.012*
Contribution of ISO 9000 to the improvement of clients' satisfaction	221	3.55	29	3.38	0.743	0.463	137	3.58	115	3.46	1.028	0.305
Contribution of ISO 9000 to the improvement of workers' satisfaction	220	3.05	29	2.97	0.436	0.633	137	3.15	115	2.90	2.149	0.033*
Sensitization towards quality by senior staff	265	4.15	34	4.00	0.995	0.321	162	4.19	141	4.09	1.407	0.296
Sensitization towards quality by middle management	255	3.92	34	4.03	-0.695	0.488	157	3.97	136	3.90	0.778	0.437
Sensitization towards quality by operative personnel	264	3.44	34	3.76	-1.923	0.055	162	3.48	140	3.46	0.167	0.868
Satisfaction of the person responsible/department of quality management	259	3.75	33	3.73	0.156	0.876	157	3.81	140	3.68	1.491	0.137
Fulfilment of the objectives of quality management	262	3.89	31	4.10	-1.489	0.137	161	3.98	136	3.82	1.852	0.065

Table 12. Main results of the ISO 9000 process(1) (\*: significant difference at a 95% confidence level)

**Use of consultancy during implementation.** No significant differences are found in any of the nine main principal results studied. Nevertheless, in five of them the evaluation is better by companies that did use consultancy. This is especially palpable in the contribution to continuous improvement, which is nearly significant ( $p=0.054$ ). Curiously, in several results the mean is inferior in companies that hired external consultants: sensitization towards quality of middle management and, above all, of operational personnel (with  $p=0.055$ ) and the achievement of objectives of quality management. In the result which we would consider fundamental, the contribution of ISO 9000 to the improvement of competitiveness, the difference is practically void, as is also the global satisfaction of the person responsible or department for quality management.

**The use of external consultancy at present.** Significant differences are found, with better evaluations by companies that use consultancy at present, in the contribution of the ISO 9000 process in the improvement of competitiveness, to continuous improvement, and in the improvement of satisfaction of the workers. In all the other cases, although differences are not statistically significant, the values are, in general, perceptively better in companies that have turned to external consultancy.

An additional analysis was also carried out, shown in Table 13, differentiating companies that used consultancy during the implementation of the system and still use it at present (“group 1” in Table 13), and those that used them then and no longer do so at present (“group 2” in Table 13). For all of the results, the evaluations are better for the first group. The differences attain statistical significance in the contribution to the improvement of competitiveness (mean values 3.59 and 3.23, respectively, with  $p=0.012$ ); in workers’ satisfaction (mean values 3.16 and 2.88, respectively, with  $p=0.025$ ), and in the fulfilment of objectives (mean values 3.97 and 3.77, respectively with  $p=0.028$ ). Among the remaining results, the most palpable difference is found in the contribution to continuous improvement (mean value 3.70 and 3.45, respectively, with  $p=0.066$ ).

Results	Group 1		Group 2		T-test	
	n	Value	n	Value	t	p
Contribution of ISO 9000 to the improvement of competitiveness	151	3.59	110	3.23	2.521	0.012*
Contribution of ISO 9000 to continuous improvement	150	3.70	105	3.45	1.848	0.066
Contribution of ISO 9000 to the improvement of clients’ satisfaction	131	3.58	90	3.51	0.556	0.579
Contribution of ISO 9000 to the improvement of workers’ satisfaction	131	3.16	89	2.88	2.254	0.025*
Sensitization towards quality by senior staff	154	4.18	111	4.12	0.562	0.574
Sensitization towards quality by middle management	149	3.96	106	3.87	0.847	0.398
Sensitization towards quality by operative management	154	3.48	110	3.37	0.917	0.360
Satisfaction of the person responsible/department of quality management	149	3.81	110	3.67	1.412	0.159
Fulfilment of the objectives of quality management	153	3.97	109	3.77	2.216	0.028*

Table 13. Principal results of the ISO 9000 process (2) (\*: significant difference at a 95% confidence level)

### **3. DISCUSSION**

The companies included in this study have resorted on a large scale to external consultancy as support in the ISO 9000 process. Over 92% of SMEs have used this external resource, and a far from negligible percentage among the large companies (over 69%), resulting in an average of 88.6%. These results are the highest results known, higher than those obtained in the studies of Taylor (1995b) in Northern Ireland (82%), Casadesús et al. (2002) in Catalonia, Spain (80%), Llopis and Tarí (2003) in Alicante, Spain (80%), Lipovatz (1999) in Greece (75%), or Mo and Chan (1997) in Australia (50%). Undoubtedly, the companies (especially SMEs) have not had sufficient self-confidence to undertake the process on their own, for different reasons (time availability, information and training), so that they have preferred to invest in external help. There are numerous empirical studies that exist which have dealt with the motivation that lead companies to contract external help, so that it has been considered unnecessary to deal with them in this study.

In general, support consultancy in the ISO 9000 process has responded satisfactorily to companies' needs, as is revealed by the average 4.25 granted to the utility of these external resources in the aforementioned process. This utility has been perceptibly higher for SMEs than for large companies (4.29 against 3.94), although it does not become statistically significant. A difference related with the size of the organization is also found in the study of Taylor (1995b) among 115 companies of Northern Ireland, but with a contrary tendency: the results of external support were better in large companies than in the SMEs, as the general understanding of the ISO 9000 turned out to be worse in these.

It is also noteworthy that almost 70% of the companies that used consultancy for the first implementation of ISO 9000 had decided repeating with the same consulting entity for the

transition process to ISO 9001:2000, which is no doubt an indicator of satisfaction with a relatively high value. These values are reasonably comparable with those obtained by Casadesús et al. (2002), in whose study 77% of the companies who would hire consultancy for this process (67% of those polled) stated that they would continue using the services of the same consultant or entity. In this same study, the satisfaction of companies with the services of consultancy attained a value of 3.75 (on a 1-5 Likert's scale) as an average of the evaluation of 14 variables, and 3.69 to the direct question in relation to the perception of the quality of the supplied service.

Once the ISO 9000 process was finished, the level of use of external consultancy decreased notably, although over half of the companies consulted stated having one available for at least some aspect of quality management. These values are higher than those registered in the study of the University of Valencia (Spain) of 106 certified companies, which refers to 39% of companies which continue with external support after certification (Llopis and Tarí, 2003). The activities for which these external services are requested are for the most part internal audits (in almost 50% of these companies) and the preparation for certification according to ISO 9001:2000 (almost 43%). This second activity, in spite of having a circumstantial character (the deadline for the transition to ISO 9000 finalized in December 2003), supposes for the majority of these companies the implementation of practices of vital importance, such as the establishment of management indicators and of a systematic analysis of clients' satisfaction, among others, which could continue being the object of external consulting in the future. The preparation of external audits (in over 7%), besides diverse activities of improvement (at 16%), are the other activities for which external consultants of quality management are hired for.

Satisfaction with the consultants hired at present is clearly high, with an evaluation mean of 4.26, higher than that of the above-mentioned for the companies of the study by Casadesús et al.

(2002). Curiously, in this case the SMEs show less satisfaction (4.24) than the large companies (4.37), even though the consultancy had proven to be noticeably more useful during the process of implementation for the first. This may probably be due to a better adaptation of consulting entities to the needs of large companies than to those of SMEs, once the need to certify their quality management system under ISO 9000 has been surpassed, for various reasons suggested by Taylor (1995b) and commented above.

In particular, for the transition process to ISO 9001:2000, the companies continue to trust the consulting entities at a high rate (two out of every three: 69% in SMEs against 45.5% in large companies), values which are similar to the 67% obtained by Casadesús et al. (2002). This means that, in our study, around 20% of the companies have decided to dispense with the use of external consultants for this process of adaptation to ISO 9001:200, which can be understood as a moderate level of learning or self-confidence in being able to carry out the process on their own. In the study of Casadesús et al. (2002) this percentage attained 67%, against an 80% of the first implementation, values which are more proximate amongst themselves.

Regarding the influence of the use of external consultancy in the results of the process ISO 9000, a distinction must be made between the use of the external consultancy during the implementation process and the use subsequent to certification.

At companies that used external consultancy during the system implementation, a tendency is observed in which the results are better in firms which face the process on their own. Nevertheless, some results break this rule. On the one hand, the sensitization towards quality by middle management and operative personnel is slightly higher in these companies: it is probably due to companies with a high self-conviction, in which all the personnel must have assumed their new responsibilities in a more natural way, without the incorporation of “strange bodies” to the

organization. These concrete results could, therefore, support those obtained by Lipovatz et al. (1999) and Carlsson and Carlsson (1996), above-mentioned. On the other hand, the fulfilment of quality management objectives is weaker in companies with external support: it is not easy to find a plausible explanation for this fact; perhaps there is more modesty in the setting of objectives in companies which tackle the process alone. At companies which use consultants they tend to leave up to them the responsibility of setting objectives, which can result in errors of appreciation and a worse fulfilment of the same.

However, it has been possible to perceive that, in companies that make use of external consultancy after certification, it is significantly higher the contributions of the ISO 9000 process to the improvement of competitiveness, to continuous improvement and to the improvement of workers' satisfaction. The differences in these contributions, among companies with and without external consulting, did not become significant during the ISO 9000 implementation process in the organization.

In this same line, it is pertinent to highlight that the results, above-mentioned, in which the contribution of external consultancy does not seem relevant during the process of implementation and certification, and in which they could even have some kind of negative influence (satisfaction of middle management and operative personnel, and fulfilment of quality management objectives) they become results which are valued more by companies with external consultants after certification.

This permits us to deduce that, probably, the main improving potential contributed by external consultancy is achieved once the period of implementation prior to certification has passed.

Also, if the evaluations given by companies which have used consultancy during the process of implementation and have maintained it once they have achieved certification are observed,

against those that have dispensed with them once they have become certified, the tendency is very clear: all the examined results are better in the first ones, and also three of them are significantly so: the contribution to the ISO 9000 process to the improvement of competitiveness, the satisfaction of the workers and the fulfilment of the quality management objectives.

Another reading of this information would permit us to suspect that the companies that dispense of external consultancy after certification suffer a setback, or at least they are not capable of reaching the levels of contribution of ISO 9000 in different areas of improvement, which are achieved by companies that maintain the consultancy. It seems interesting to study in more depth this phenomenon in future investigations, that could well be related to the dependency on consultants that many organizations suffer from, pointed out by authors such as Huarng (1998) and Gustafsson et al. (2001).

As to one of the aspects traditionally questioned of the activities of external consultants, the wording of a good part of the documentation of the quality management system, the results obtained do not permit us to find an influence in either a positive or negative sense.

All these results must be taken with care, especially due to the fact that the use of external consultancy is heterogeneous: the companies used diverse consultants, with different levels of experience and quality, and the use of them is also different, in terms of the companies' needs.

There may also be certain complacency among companies that use external consultancy at present: delegating certain responsibilities to them may annul or reduce the critical spirit of those responsible, and provoke an artificial heightening of its evaluations. Nevertheless, the personal character of the interviews and the size of the sample attained permit the tendencies pointed out by the results of the investigation to be considered relevant.

#### 4. CONCLUSIONS AND RECOMENDATIONS

Even though opposed opinions exist, the truth is that the SMEs find themselves with serious scarcities in the initial stages of the implementation of a quality management system. The ignorance of concepts, techniques and standards, and the syndrome of lack of time tend to be the most important. Apart from the haste to achieve the ISO 9000 certification, be it due to external pressure or due to an internal motivation, they usually tip the balance in favour of contracting external consultants.

In our opinion, which coincides with that of Huarng (1998) and that of Dov (1998), external consultancy can provide essential help, but it must depend on the company's authentic needs, and hopefully, not be motivated by the necessity of a quick certification. We also agree with the opinion of McLachlan (1996): the use or not of external consultancy will depend on the answers to the questions: *Are we able to do it by ourselves?*, *Do we have time for it?*, and *Can we economically afford it?* The aforementioned author chooses the use of a consultancy firm, even if the answer to the first two questions is affirmative, since an expert orientation is always convenient. This is especially clear in the case of SMEs, which have many difficulties in having experts within its organization. The problem is that they also usually have economic difficulties to be able to hire. Nevertheless, solutions and alternatives exist that can reduce these difficulties. For example, Gustafsson et al. (2001) propose sharing consultants' costs among company groups, working simultaneously (in networks). It permits reducing the unit cost per company and permits learning of successes and errors of others.

On the other hand, the empirical study has demonstrated in a clear way that external consultancy is in general satisfactory for companies that make use of them (89% in total, 92% among SMEs): the mean evaluation that the utility of consultancy reaches, both during the ISO 9000 process and

at present (in its case) surpasses 4.20 points of average (also for SMEs). Also, almost 70% of the companies that used external consultancy during the ISO 9000 process have again used the same consultants, are doing so or intend doing so in the transition to ISO 9001:2000.

Also, the results of the ISO 9000 process are in general better in companies that used external consultancy during the process. The use of external consultancy after certification is shown to be more beneficial for the companies: several results of the ISO 9000 process are significantly better amongst companies that continue with external advice than in those that do not.

All these facts demonstrate that the use of external consultancy has not been a disagreeable experience for the companies investigated, rather, on the contrary, it has been beneficial during the ISO 9000 process and subsequently.

Therefore, the option to hire external consultancy in quality management must be evaluated, not only by those companies that undertake the implementation of a quality management system, but also for its consolidation, maintenance and post-certification improvement. But, the organization must not deposit all the responsibility of implementation and/or maintenance of the quality management system in external hands. The consultancy will only prove to be interesting and profitable if it really becomes involved in the process, with the management, and leads the company towards total quality management, not just to develop and certify the system. It is actually about, the hiring of consultancy to develop internally the knowledge, and not only to “rent it”, as correctly pointed out by Marimon et al. (2003).

The problem is that companies cannot know with certainty if this will occur when hiring the services of a consultancy firm, so that it is always recommendable to resort to public records of experts or auditors of quality, as well as examining thoroughly the presented record. A good set of recommendations when deciding upon the hiring of an external consultancy is offered by Dov

(1998) and Colferai (2002). It is advisable to also point out that the International Organization for Standardization (ISO) has set up a work group, the ISO/TC 176/SC 3 Work Group 9, in order to develop a technical specification, the ISO/TS 21095, called “*Guidelines for the selection and use of consultants of quality management systems*”. This specification has the objectives of helping organizations to select consultants, for the actual consultants as a guide of the professional attributes desired, and for consulting companies, for the selection of its personnel (Colferai, 2002).

In the system implementation process, the consultants should contribute with their *know how* in planning and general orientation, the elaboration of the documentation (an aspect in which it is essential to know the company’s characteristics and to resist the temptation of implanting a predefined documentary package), the training and the sensitization of personnel and the carrying out of the first internal audit of the system. As pointed out by Gustafsson et al. (2001), the good acceptance that external consultants tend to have in formative points should be made use of and all the weight of the responsibility of the implementation falling on the consultants should be avoided, as it can lead to dependency and a sensation of abandonment once the consultants’ work has finished. It is fundamental to achieve a high consciousness-raising of the personnel from the initial stages of the process.

After the ISO 9000 process, during the maintenance of the system after certification, the activities which the external consultancy could help the organization with are the training and sensitization of personnel, the carrying out of periodic internal audits (collaborating with one or several auditors of the organization), the study and analysis of the client’s satisfaction, and orientation in the implementation of practices not required by ISO 9000, such as quality costing systems, the measurement and analysis of workers’ satisfaction, the participation of personnel in

structured systems or the evaluation of the company's impact in its social environment. It can also help in the process of integration of other management systems, or in a self-evaluation following a model like EFQM, be it for the pure interest of the company or with the intention of putting forward for a prize of quality. Besides, a good external consultancy gives security to SMEs when getting to know or tackling novelties of changes in the legislation or standards of application (as has occurred in the already concluded period of transition to ISO 9001:2000).

As is known, companies use external consultants for a great diversity of management aspects, quality management systems being one of the applications most habitually used during the last decade. In our opinion, the main conclusions obtained in this work can be extrapolated to different areas in which a company, especially in the case of SMEs, can resort to outside help, such as productive logistic, environmental management, risk prevention or any other facet in which advice, training, and rationalization or improvement of management is needed. The evaluation and independent diagnosis, the collaboration with company managers in establishing proposals of improvement and its implementation, and the sensitization and training of personnel, are aspects in which the external consultancy can provide excellent help with, and contribute to the improvement of the company's global competitiveness.

## **REFERENCES**

CABANELAS, J.; MELO, C.; LÓPEZ CORRALES, F. (2000): Resultados y Perspectivas de las Empresas No Financieras del Área Económica, Central de Balances de la Euro-Región (CEBER), Consorcio de la Zona Franca, Vigo.

CARLSSON, M.; CARLSSON, D. (1996): "Experiences of implementing ISO 9000 in Swedish Industry", International Journal of Quality & Reliability Management, Vol. 13 No. 7, pp. 36-47.

CASADESÚS, M.; GIMÉNEZ, G. (2001): "Los beneficios de la implantación de la normativa ISO 9000: estudio empírico en 288 empresas de Cataluña", Cuadernos de Economía y Dirección de la Empresa, No. 9, pp. 285-301.

CASADESÚS, M.; MARIMON, F.; HERAS, I. (2002): "Quality service of ISO 9000 consultants", *International Journal of Quality & Reliability Management*, Vol. 19 No. 8/9, pp. 998-1013.

COLEMAN, S.; DOUGLAS, A. (2003): "Where next for ISO 9000 companies?", *The TQM Magazine*, Vol. 15 No. 2, pp. 88-92.

COLFERAI, G. (2002): "Cómo elegir a un consultor competente en sistemas de gestión de la calidad", *ISO Management Systems*, versión española, Diciembre 2001, pp. 10-12.

DE BENITO, C.M. (1998): "Guía para la implantación de la calidad total en pymes", *Alta Dirección*, No. 197, pp. 13-27.

DOV, M. (1998): "Choosing a consultant for your ISO 9000 implementation", *Industrial Management*, Vol. 40 No. 1, pp. 29-31.

GUSTAFSSON, R.; KLEFSJÖ, B.; BERGGREN, E.; GRANFORS-WELLEMETS, U. (2001): "Experiences from implementing ISO 9000 in small enterprises – A study of Swedish organisations", *The TQM Magazine*, Vol. 13 No. 4, pp. 232-246.

HUARNG, F. (1998): "Integrating ISO 9000 with TQM spirits: a survey", *Industrial Management + Data Systems*, Vol. 98 No. 8, pp.373-.

KARAPETROVIC, S. (1999): "ISO 9000: the system emerging from the vicious circle of compliance", *The TQM Magazine*, Vol. 11 No. 2, pp. 111-120.

KRASACHOL, L.; WILLEY, P.C.T.; TANNOCK, J.D.T. (1998): "The progress of quality management in Thailand", *The TQM Magazine*, Vol. 10 No. 1, pp. 40-44.

LIPOVATZ, D.; STENOS, F.; VAKA, A. (1999): "Implementation of ISO 9000 quality systems in Greek enterprises", *International Journal of Quality & Reliability Management*, Vol. 16 No. 6, pp. 534-551.

LLOPIS, J.; TARÍ, J.J. (2003): "The importance of internal aspects in quality improvement", *International Journal of Quality & Reliability Management*, Vol. 20 No. 3, pp. 304-324.

MARIMON, F.; CASADESÚS, M.; HERAS, I. (2002): "Do quality consultants offer a quality service?", *Total Quality Management*, Vol. 13 No. 6, pp. 797-811.

MARIMON, F.; CASADESÚS, M.; HERAS, I. (2003): "The quality of quality consultants: an empirical study", *The Quality Management Journal*, Vol. 10 No. 1, pp. 20-31.

MARTÍNEZ FUENTES, C.; BALBASTRE, F.; ESCRIBÁ, M.A.; GONZÁLEZ CRUZ, T.; PARDO, M. (2000): "Analysis of the implementation of ISO 9000 quality assurance systems", *Work Study*, Vol. 49 No. 6.

McLACHLAN, V.N. (1996): "In praise of ISO 9000", The TQM Magazine, Vol. 8 No. 3, pp. 21-23.

MO, J.P.T.; CHAN, A.M.S. (1997): "Strategy for the successful implementation of ISO 9000 in small and medium manufacturers", The TQM Magazine, Vol. 9 No. 2, pp. 135-145.

TAYLOR, W.A. (1995a): "Senior executives and ISO 9000: attitudes, behaviours and commitment", International Journal of Quality & Reliability Management, Vol. 12 No. 4, pp. 40-57.

TAYLOR, W.A. (1995b): "Organizational differences in ISO 9000 implementation practices", International Journal of Quality & Reliability Management, Vol. 12 No. 7, pp. 10-27.

VAN DER WIELE, T.; BROWN, A. (1997): "ISO 9000 series experiences in small and medium sized enterprises" Total Quality Management, Vol. 8 No 2-3, pp. 300-305.