Quality service of ISO 9000 consultants

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Abstract *This paper aims to assess the quality of the service offered by quality consultancies. To this end, an empirical study, using SERVQUAL methodology, was carried out on Spanish companies that had used consultants when introducing their quality system in keeping with the ISO 9000 standards. Company representatives were asked about their previous expectations of the service and about the real benefits obtained from the consultants. This research study, after a factorial analysis, establishes a series of indicators designed to measure the input of the consultant in setting up the quality system. A gap was detected between the previous expectations of the service and the actual benefits obtained therefrom. Findings could be used for practitioners to improve their service.*

Introduction

In the business field there is full awareness of the increase in the two basic aspects of quality management: on the one hand, the introduction of quality assurance systems and, on the other, the setting-up of models for overall quality management. Observers note that quality assurance systems in keeping with the prevailing ISO 9000 standards are being introduced all over Europe at a growing rate (ISO, 2000). In a parallel fashion, there has been a notable growth in demand for the specialist services of quality management consultants.

In recent years, the academic field has carried out much in-depth, empirical research into the phenomenon of the introduction of ISO 9000 quality systems at national and international level. Among other considerations, these research studies have attempted to analyse why companies decide to introduce ISO 9000, along with the difficulties involved and the benefits derived therefrom.

All these studies confirm the importance of the consultant services engaged by companies in order to introduce the new ruling, but the actual influence of these services has not been fully analysed. Nevertheless, obvious questions on the subject spring to mind: What contribution have the consultant services brought to companies that are involved in introducing ISO 9000? Has the consultant service proved beneficial? Are the companies satisfied with the quality consultants? Have the consultants lived up to the expectations of their clients? What benefits are involved?

These questions are obviously of interest to the companies involved but also to consultants eager to determine the degree of client satisfaction, on which their very future depends. Moreover, the analysis of these questions is even more relevant in the present situation where companies are involved in a process of adaptation to the new ISO 9000:2000 standards. For all the above reasons, and in order to resolve the issues thereby raised, the present empirical study was carried out on companies that have used consultancy services to introduce their ISO 9000 quality systems.

Antecedents

Most research into quality management at a world-wide level refers to the motivation of companies to introduce quality systems (Meegan and Taylor, 1997), to the benefits derived from the introduction of such systems (Lloyd's Register Quality Assurance, 1994; Vanguard Consulting, 1994; Brown and Van der Wiele, 1995; Buttle, 1997; Jones *et al.*, 1997; Casadesús and Giménez, 2000), or to the importance of the human factor in quality management (Vloeberghs and Bellens, 1996).

Many studies mention the importance of the support lent by consultant services for the introduction of the ruling. In this country, previous research showed that approximately 80 percent of 286 Spanish companies surveyed use external consultant services (Casadesús, 1998). This can be seen in Figure 1. The services provided range from in-service training prior to introducing a quality system to maintenance auditing of the system after certification. The service can also include producing the quality manual and drawing up procedures for the quality assurance systems.

In like manner, some research studies mention the relative importance of companies that have used external consultancies compared with those that have not (Vloeberghs and Bellens, 1996) but no study has assessed the real quality of the services offered by the consultancies or whether this service was really what the client company expected. Some considerations on the contributions of consultant firms can be found (including factors such as employee training, information and motivation), but no studies have been made
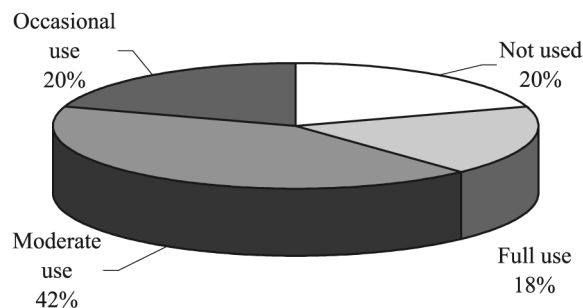
Source: Casadesús (1998)

Figure 1.
Percentage of companies
that have used
consultant services
when introducing
quality systems

on issues of such crucial interest as the following: to what extent does the engagement of a consultant service provide benefits to the firm? Can these benefits be measured? Are the benefits of an intangible nature that is hard to express in monetary terms? This is a complex issue indeed, as has already been pointed out in the literature on the subject (Nachum, 1999), where some authors have put forward their own methodology for calculating the yield from an investment in consultation services (Phillips, 2000).

The present paper aims to summarise the main conclusions drawn from a research study that analyses the expectations and fulfilment of expectations among client companies that have used consultancy services to introduce ISO 9000 quality assurance systems. The paper also analyses the benefits obtained by the companies as a result of the introduction of the ruling following advice given by professional consultants.

Methodology

An empirical research study has been recently carried out with the aim of analysing and attempting to provide an answer to these questions. A sample was taken of companies that had used consultant services for implementing quality assurance systems in keeping with the ISO 9000 standards on the subject. This model or type of quality management was chosen because it is undoubtedly the most widely used in Spain and also because field work is made easier by the existence of registers of all the companies that have been issued with the ISO 9000 certificate. In more specific terms, the research was carried out within the industrial area of Catalonia and focuses on companies that were certified in 1997, 1998 and 1999.

The companies in the sample were sent a questionnaire, adapted from the widespread SERVQUAL model drawn up by Zeithaml *et al.* (1993), for consulting services in Spain. This is a model whereby the quality of a given service is assessed on the basis of the expectations and perceptions of the clients. This is considered to be the best known system presently used for measuring service quality.

In short, the questionnaire was designed to gather information about the quality of the consultancy service as perceived by companies that engaged the service to introduce ISO 9000 and about the expectations of this type of service that were previously held by the company. With this information, the questionnaire then attempts to find out the benefits that were obtained by the company as a result of engaging the service. Each of these aspects will be considered in the following paragraphs. It must be borne in mind, however, that the responses to these questions have been compiled on a Likert scale. The questionnaire was completed by the addition of extra questions designed to obtain general information about the company and about the consultancy that was employed.

The questionnaire was delivered via ordinary mail to 483 managers who are responsible for ISO 9000. After that, these people were contacted by telephone to explain the purpose of the study, and a fax or electronic mail was delivered again to those who agreed to participate. A total of 87 valid questionnaires

were obtained, representing a response rate of 18 percent, of which 65 came from companies that had used consultancies to introduce their quality system. The population on which the research was carried out is less than 1,670 companies, this being the total number of certificates issued over the sample period in Catalonia. It must also be borne in mind that many companies hold more than one certificate. For these reasons, with a confidence interval of 95 percent (working on the hypothesis that $p = q = 0.5$), the margin of error for the sample is 10.25 percent. Likewise, for the companies that employed consultancies, taking the same population into consideration, the margin of error for the sample is less than 11.9 percent.

Perceived quality of the quality consultant services
In their well-known model, the authors Zeithaml *et al.* (1993) distinguish five different dimensions that define the quality of a given service:

(1) *Tangibles*: appearance of the physical facilities, equipment, personnel and communication equipment.

(2) *Reliability*: ability to perform the promised service dependably and accurately.

(3) *Responsiveness*: willingness to help clients and provide prompt service.

(4) *Assurance*: knowledge and courtesy of employees and their ability to inspire trust and confidence.

(5) *Empathy*: caring, individualised attention the firm offers its clients.

The quality of the service as perceived by clients will be derived from comparing their prior expectations of the service with their appreciation of the actual service provided, in such a way that a given service will be considered excellent for the client when the benefit exceeds prior expectations, acceptable when the benefit lives up to the client's expectations and deficient when the service is poorer than expected.

In order to determine the perceived quality in each dimension, the SERVQUAL questionnaire was used, with a total of 14 questions in all. It should be noted, however, that we adapted these questions to our circumstances, following guidelines laid down by different questionnaires used in other empirical studies. To this end, the following studies should be mentioned: research by Samson and Parker (1994) into the engineering consultancy industry in Australia; research by Ribeiro (1996) into the consultancy sector in Valencia; the study by Casadesús (1998) of the introduction of ISO 9000 into Catalonia; and a paper by Escanciano (2000) on quality systems in Spain. Table I shows the grouping of the different questions or items in each of the dimensions of the survey. This aggregation was made "a priori", although there was no mention of dimensions in the questionnaire.

The reliability of the data was examined for the 14 perception-item using the alpha of Cronbach: the standard value is 0.9355, and the 14 alphas obtained when one of the items is deleted are all between 0.9271 and 0.9356 (Table I).

Factor	Description of items
1. Tangibles	Personal appearance of staff Visual attractiveness of equipment in the consultancy Client-friendly software
2. Reliability	Ability to perform the promised service Fulfilment of commitments within the established time limits Co-ordination between different company departments Detailed specification of aims of time limits
3. Responsiveness	Willingness to help clients Enthusiasm and involvement in the project
4. Assurance	Ability to inspire trust and confidence Professional knowledge and expertise of consultants
5. Empathy	Company concern for the best interests of the client Communication and interpersonal skills of the consultant Client satisfaction with consultation

Table I.
Distribution of the 14 items surveyed in relation to the different dimensions of the model proposed by Zeithaml *et al.* (1993)

The data collected during field work referring to the quality of the consultancy services as perceived by the companies were analysed following the principal components method. Although it is known that, from the statistical point of view, it has the weakness of the size of data, it has a great power when it is used to compare with the Zeithaml *et al.* (1993) model.

In this way, after the varimax rotation method was applied, only three factors with eigenvalues greater than 1 were obtained (Appendix 1). The contrast analysis is correct: the determinant of the correlation matrix is 1.055E-5, and the Kaiser-Meyer-Olkin measure is 0.834. These three factors combine to explain the 72.3 percent of the total of the variance. Inter-item analysis was used to check the scales for internal consistency. Analysis calculated a Cronbach coefficient alpha on the items within each factor. The three factors have Cronbach alphas above 0.75, and the standardized item alphas range from 0.76 to 0.93. These three constructs demonstrate good reliability.

It can be deduced from the grouping of questions about perceived quality suggested by the factor analysis that a relative similitude exists to the generic model by Zeithaml *et al.* (1993). Table II shows the dimensions of the Zeithaml *et al.* model in the column headings. The factors determined by the factor analysis figure in the rows underneath. Analysis of this Table shows the relationship between both forms of grouping the 14 questions on perceived quality that figure on the questionnaire.

Table II.
High saturations of the three factors with the principal component method with varimax

	Tangibles			Reliability				Responsiveness		Assurance		Empathy		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Factor 1				X				X	X	X	X	X	X	X
Factor 2					X	X	X							
Factor 3	X	X	X											

The three factors that define the perceived quality of ISO 9000 consultancy service are the following:

(1) *Factor 1*: *Customer service, assurance and empathy*. This factor refers to a set of aspects such as the consultant's knowledge of the ruling, involvement of the consultant in the client company's interests, care and individualised attention given by the consultant to the company, the consultant's willingness to help, and the climate of trust and confidence that is transmitted to the client. This first quality perception factor is given an average rating of 3.89 on a scale of 1 to 5.

(2) *Factor 2*: *Scheduling*. The scheduling factor represents the skills of the consultants in completing the work within the agreed time periods. It refers thus to the result of the service, i.e. the obtaining of the certificate within the established budget and time period. This factor should be a *sine qua non* condition for good service because it is assumed that the providers of a service must fulfil their promises. On the whole, clients do not give any extra credit to companies that honour their obligations but, when this is not the case, poorer quality in the service is detected here with a 3.50 on the same scale. This is an indication that this aspect of the service should be significantly improved.

(3) *Factor 3*: *Tangibles*. This last factor refers to the office appearance, to the equipment used therein and even to the personal appearance of the consultants. The perception detected in this factor is rated at 3.62.

A first conclusion to be drawn from the results is that the quality of the service is good. Several additional factors also exist to bear out this statement:

- The arithmetic mean of the Likert scale ratings corresponding to the set of 14 questions on perceived quality is 3.75. This is considerably higher than 3, the central value of the scale. This can be taken as an indicator of a good perception of quality, while still, however, allowing for improvement. This assessment fully coincides with a question on "overall perception of the quality of the service" that received an average rating of 3.69, thereby validating the results obtained.

- The statement "working with the consultant was a worthwhile experience" is rated with an average of 3.80. This is not a direct question on quality, but gives us an idea of the degree of satisfaction with the service received.

- The statement "If I were to reinitiate the process, I would choose the same consultant" was rated at 3.55. It must be borne in mind here that 55 percent of the companies have in fact returned to the same consultant after receiving their certificate (not necessarily for quality-related tasks). This is a high index considering that the specific purpose of the introduction process is fulfilled on obtaining certification. If the companies continue to use the consultant after this point, it would seem to indicate a high degree of satisfaction.

- Another index of satisfaction with the service received is the intention to use the same consultant to adapt the company system to the new ISO 9000:2000 standards. A total of 77 per cent of the companies that intend to use a consultancy to update their systems will reuse the same service.

### Expectations of service given by quality consultants

Company expectations of the services given by consultants were researched using the same methodology and analysing the same aspects and equivalent sets of questions to those already used to assess perceived quality in the same services.

In the questionnaire a section was included in which 100 points should be assigned to the five dimensions, balancing the importance of them.

From the results obtained, it can be observed that the most important of the five dimensions defined by the Zeithaml *et al.* model (1993) is considered to be "Reliability" (in which the consultant delivers the agreed service in an accurate and trustworthy manner). From a total of 100 points for all five dimensions, "Reliability" received 28 points, whereas "Tangibles" were considered of lesser importance and were only awarded 12 points. However, this same "Reliability" dimension, most closely related to the "Scheduling" factor, coincides exactly with the lowest rated factor in terms of service quality. This points to an urgent need for the consultants to improve this factor.

On quantifying the level of quality expected from these services, using another set of 14 questions equivalent to the previous set (on the same scale), the arithmetic mean is found to be 4.35. Thus, expectations of the service are much higher than perceived quality of the same. In short, it is clear that the difference generated between the arithmetic mean of perceived quality of the service and expectations of the same is –0.61 (–12 percent). Thus, although a high perception of quality for services rendered by quality consultants was detected in the previous section, prior expectations of the same services were even higher.

If we analyse the gap between expected quality and the quality that is actually perceived, on the basis of the factors that define service quality, as seen above, it can be observed from Figure 2 that the gap is greatest in the "Scheduling" factor, and least significant in the "Tangibles" factor.
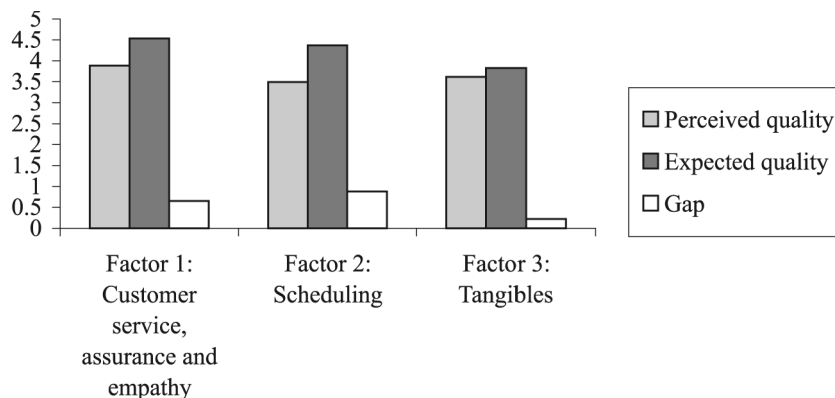
Figure 2.
Perceived quality, expected quality and the gap between expectations and quality in each of the three factors used to define service quality

In a nutshell, we can conclude this part of the analysis by stating that, although the companies hold a good opinion of the quality of the advisory services received, prior expectations of the same were considerably higher. This conclusion shows that there is still room for improvement of the service offered by quality consultants.

Benefits obtained by clients of quality consultant services

After analysing the quality offered by consultants and the expectations raised by this type of service, an analysis is made of the clients' perception of the benefits directly derived from the consultant's intervention. Although it must be considered a priori that clients are not usually very sure about the value of the service that they are engaging or the price that they are prepared to pay for it, it can be said that, if this type of consultancy exists, it is because clients think that they can obtain some benefits for which they are prepared to pay a fee. These benefits have been assessed by a set of 13 questions, likewise answered on the Likert scale [1.5] as compiled in Table III. The benefits considered are not merely of an economic nature but include diverse factors such as increased motivation in workers and improved relationships with customers and suppliers.

Assessment of the results obtained shows that the arithmetic mean of all these benefits is only 3.05. An overall assessment of the benefits gained from use of a consultant was obtained from one single question, the response to which gave the similar result of 3.17. In short, both indicators coincide in highlighting the fact that the companies did not perceive any benefits from the input of the consultant.

Items
Better understanding of quality as a result of working with an external consultant
Satisfaction with the skills provided by the consultants
Increased company motivation after working with external consultants
Adaptation of ethical approach after working with an external consultant
Definition and aims of quality policy following advice from the consultant
Definition of and approach to process following advice from the consultant
Improved approach to customers following advice from the consultant
Setting-up of beneficial relationships with customers and/or suppliers following advice from the consultant
Setting-up of customer satisfaction control measures following advice from the consultant
Ideas for growth of company yield following advice from the consultant
Setting-up of continuous improvement scheme in the company following advice from the consultant
Improved understanding of the relationship between the different processes and how to manage the same in terms of a system
Improved decision taking based on data analysis following advice from the consultant

Table III.
Items analysed to assess the benefits of working with a consultant when introducing a quality system

From a factor analysis, on extracting factors with the principal components and varimax rotation method, two factors with eigenvalues higher than 1 are obtained (Appendix 2). The analysis is correct. The determinant of the correlation matrix is 7.162E-06 and the KMO measure is 0.881. Moreover, the two factors account for 70 percent of the variability of the sample.

From the variables with the highest saturations in each factor, we decided to call the first factor "Client approach" and the second factor "Before the ruling is introduced". This second factor includes all the benefits derived from the steps prior to introduction: definition of quality policy, identification of aims, definition of procedures and improved understanding of quality.

Table IV shows the grouping of the items related to benefits derived from working with a quality consultant.

Relationship between perceived quality and benefits provided by the consultant

The next step consisted of establishing the relationship between perceived quality and the benefits obtained from using the service of a consultant. The research study detected and confirmed the relationship existing between the two concepts with different sets of statistics. To summarise, this relationship was analysed in two different ways: first, from questions eliciting an overall assessment on quality and benefits, i.e. the analysis of the contingency table resulting from the crossing of the two variables; and second, from the analysis of the relationship between the variables of mean quality and mean benefits calculated as a mean from the corresponding sets of questions.

Contingency Table V relating the two overall assessment variables on the Likert scale [1.5] is a 5×5 square table. In this respect, the Pearson chi-square statistics and the likelihood ratio indicate the existence of a relationship.

Table IV.
High saturation of the two factors with the PAF method with varimax rotation

	1	2	3	4	5	6	7	8	9	10	11	12	13
Factor 1		X	X				X	X	X	X	X	X	X
Factor 2	X			X	X	X							

Table V.
Contingency table statistic between overall perceived quality and overall benefits

	Value	Freedom degree	(Bilateral) asymptotic sig.
Pearson's chi-square	52.979[a]	16	0.000
Likelihood ratio	45.709	16	0.000
Linear by linear association	27.12	1	0.000
Number of valid cases	62		

Note: [a]22 cells (88.0 percent) have an expected frequency of less than 5. The minimum expected frequency is 0.24

The association measurements that are normally used on an ordinal scale (Gamma = 0.759, Kendall's tau-b = 0.563 and Somers' d = 0.562, each with a p value of 0.000 in every case) also detect a relationship between the different variables. A log-linear model was set up to explain the frequencies in the contingency table cells and the saturated model was found to be the most suitable for the purpose. This model includes the interaction between the two variables.

To sum up, it has been statistically shown that the variables have a clear positive correlation. The higher the perceived quality, the higher the benefits, and vice versa. On the other hand, and as a second way of detecting and defining a relationship, a linear regression was made between two variables that were calculated as the mean from the set of questions on perception and the mean from the questions on benefits. The analysis indicates that the variables are correlated, although the Pearson correlation coefficient is 0.588, with zero significance level (Figure 3).

Proceeding logically, the very design of the variables enables the rank in both cases to be [1.5]. Both cases present variables of a linear combination of several questions answered on the Likert scale [1.5]. The relationship between the variables can be clearly seen in Figure 3. Leaving the mean perceived benefit as an independent variable, the linear regression has been calculated as:

$$Mean\ Arithmetic\ Benefit = 0.456 + 0.702^*Mean\ Perceived\ Quality$$

The slope of the regression is positive, but less than the unit. A unitary increase in quality does not result in a unitary increase in benefits, but only in an increase of seven-tenth. The regression coefficient associated with the dependent variable obtained a zero significance level.
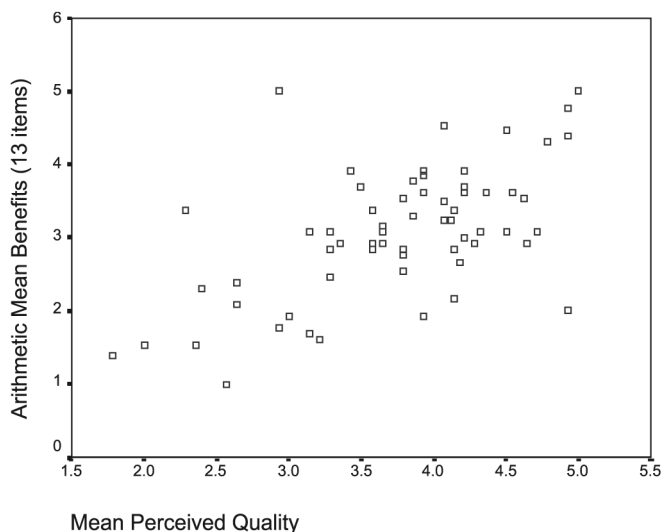
Figure 3.
Scatter diagram of the variables "mean perceived quality" and "mean benefits"

In summary, the analyses point to the existence of a significant relationship between the efforts of the consultant to provide a better quality service and the client's perception of improved benefits.

Quality of consultant companies in relation to their size

A study of the performance of consultant companies in relation to their size was made on the basis of the collected data. The sample was divided into four categories: companies that engaged the services of a single independent consultant; companies that used consultancies with a staff of between two and five consultants; companies that used consultancies with a staff of between six and 50 consultants; and lastly companies that used consultancies with a staff of over 50 consultants. The results of this segmentation can be seen in Figure 4.

It was observed that the quality of the service is related to the size of the consultant company: the larger the company, the better the service. The big consultant companies obtain a significantly higher quality rating than the smaller companies. Whereas small companies (with two to five consultants) obtain an average rating of 3.39, the average rating of the consultancies with a staff of over 50 employees stands at 4.43. This represents a large difference of over one point. It is noteworthy, however, that professional consultants working independently offer a high quality service and score a rating that is closer to that of the large consultancies than the small ones.

There also seems to be a negative relationship between the expectations of the client company and the number of workers employed by the consultant company. However, this does not carry any statistical significance.

In the case of consultants working alone as independent professionals, expectations of the service and perceived quality of the same are both very high. On the other hand, although their clients have lower expectations, the large consultant companies offer the best quality service. In this case, indeed, perceived quality is higher than expectations.
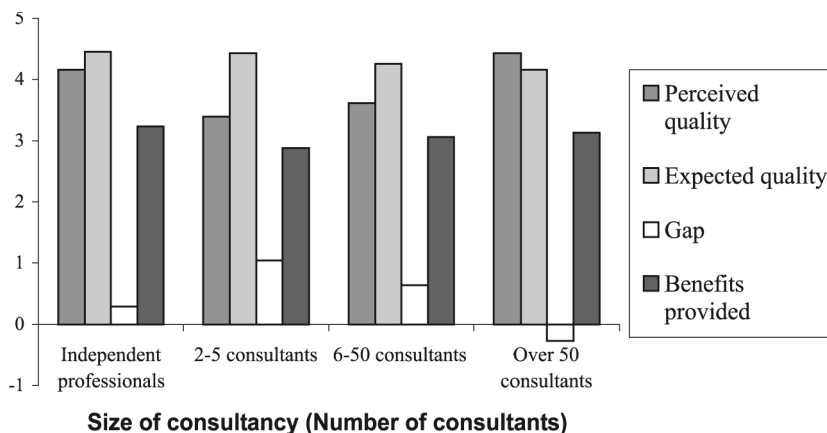
Figure 4.
Perceived quality, expectations, gap and benefits in relation to the size of the consultancy

On the other hand, similar results are found when the benefits from using a consultant are analysed according to the size of the consultant company. Small companies (between two and five consultants) provide the fewest benefits for their clients, with an average rating of 2.88, whereas the large companies obtain an average rating of 3.13. Once again, it is noted that independent professional consultants follow a different pattern and obtain the highest ratings of all. All these relationships are statistically significant, as shown by the Kruskal-Wallis test carried out by grouping the variables according to the size of the consultant companies (Table VI).

The perceived quality and the gap between expectations and perception both present significantly different averages with a significance level of 0.05.

In a parallel manner, the performance of the variables of quality, expectations and benefits was analysed in relation to the size of the client company. In short, no statistically significant relationship was detected between these variables and the size of the client company in terms of number of employees.

Cost of consultant services

It is difficult to assess the benefits obtained from a consultant service without taking into consideration the cost of the same. For this reason it was considered appropriate to analyse the questionnaire data in terms of the costs involved. In brief, it can be concluded from an analysis of the data that these services are not expensive. An assessment of the fees charged gives the lowest rating of the whole questionnaire data, i.e. 2.72. This value is lower than the average value of the scale, thus indicating a slight variance with the above statement.

Companies invested few resources in the introduction of the ruling. It was found that 62 percent of the sample invested less than 15,000 Euro. Among the companies that engaged the services of a consultant, the corresponding fees amounted to 48 percent of the total cost of introduction. In most cases (77 percent), the consultant's fees are stipulated right from the beginning. It can be assumed that the consultancies are so familiar with their service that they can make an initial estimate of the cost of introducing the ruling with a high degree of precision. This type of service has been steadily growing ever since it was

	Mean perceived quality	Mean expectations	Non-weighted quality gap	Arithmetic mean benefits 13 items
Chi-square	14.65	1.913	14.11	1.890
Freedom degree	3	3	3	3
Asymptotic sig.	0.002	0.591	0.003	0.596

Notes: [a]Kruskal-Wallis test; [b]Grouping variable: number of consultants

Table VI.
Kruskal-Wallis test statistics for the variables "perceived quality", "expectations", "gap between expectations and perceived quality" and "mean benefits" when grouped by "number of consultants"

started a decade ago and can therefore be considered as standard (Martínez *et al.*, 2000). Moreover, it is interesting to note that the offer of the service has also increased, which has resulted in a corresponding price adjustment.

Conclusions

One of the characteristics that differentiates a service from a product or material goods is that the service is sold first and later "manufactured". Moreover, the production and consumption of the service are simultaneous, i.e. a service cannot be stored. Thus, the overall assessment of the client springs from two sources: the end result of the service and the very process by which the service is provided (Berry, 1995).

For these reasons, the assessment of the quality of a service is not an easy task and, as pointed out by Groth and Dye (1999), the providers of a service should bear in mind this dual aspect by which a service is appraised. Therefore, they should be able to recognise the different degrees by which the service itself and the provision of the service are being assessed. Despite this, we consider it important to assess these services from the point of view of the client company, as has been done in the present research study.

From all this, we can draw the overall conclusion that the ISO 9000 advisory services are favourably regarded on the whole. However, it should also be noted that clients expect an even higher quality. In short, the client companies expect a higher quality from the service than that which is actually provided.

It has been shown that the concept of quality can be broken down into three factors, one of which is the skill of the consultant in introducing the ruling within the agreed time period, and this is the aspect of the service that obtains the poorest quality rating. This factor is closely linked to the reliability factor, which is considered to be of the highest importance by the client companies. For this reason, the most reiterated request for improvement by the clients is that the consultants perform the required tasks within the agreed time periods.

Moreover, the results of the study show that the performance of independent professional consultants is very different from that of small consultant companies. Independent consultants offer a high quality service that lives up to the very high expectations of their clients. The benefits that these clients gain from working with a consultant are also perceived as very high.

During this work, it has been noted that the quality offered by consultant companies that employ a staff of professionals varies according to the size of the company. The benefits perceived by their clients are very similar to but are slightly higher than those perceived by companies employing large consultancies.

Finally, although we realise that our study relates to only one region of Europe, we believe that our findings have broader implications for researchers and practitioners. Thus, we guess that it would be interesting to carry out similar surveys in other European and US regions. For practitioners, our findings should give pause for thought. We guess that these findings are very

interesting in order to improve their service, and that they should somehow measure and control their service quality. We really think that, for all the professionals working in the quality field, a quality service should be a real No. 1 purpose.

References

Berry, L. (1995), *Más allá de la excelencia en el servicio. Un plan para la acción*, Deusto Publications.

Brown, A. and Van der Wiele, T. (1995), "Industry experience with ISO 9000", *Asia Pacific Journal of Quality Management*, Vol. 4 No. 2, pp. 8-17.

Buttle, F. (1997), "ISO 9000: marketing motivations and benefits", *International Journal of Quality & Reliability Management*, Vol. 14 No. 9, pp. 936-47.

Casadesús, M. (1998), "La normativa de aseguramiento de la calidad ISO 9000 en Cataluña: expectativas y efectos. Estudio empírico", Research project CICYT, Reference: SEC96-1005.

Casadesús, M. and Giménez, G. (2000), "The benefits of the implementation of the ISO 9000 standard: empirical research in 288 Spanish companies", *The TQM Magazine*, Vol. 12 No. 6.

Escanciano, C. (2000), "Influencia de la certificación ISO 9000 en el avance de la empresa española hacia la calidad total", paper presented at the 1st World Conference on Production and Operations Management (POM), Seville.

Groth, J.C. and Dye, R.T. (1999), "Service quality: perceived value, expectations, shortfalls, and bonuses", *Managing Service Quality*, Vol. 9 No. 4.

ISO (2000), available at: www.iso.ch/iso/en/iso9000-14000/pdf/survey9.pdf

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. 14 No. 7.

Lloyd's Register Quality Assurance Ltd (1994), *BS 5750/ ISO 9000 – Setting Standards for Better Business*, Lloyd's Register Quality Assurance Services Ltd, Croydon.

Martínez, C. *et al.* (2000), "Analysis of the implementation of ISO 9000 quality assurance systems", *Work Study*, Vol. 49 No. 6.

Meegan, S.T. and Taylor, W.A. (1997), "Factors influencing a successful transition from ISO 9000 to TQM. The influence of understanding and motivation", *International Journal of Quality & Reliability Management*, Vol. 14 No. 2.

Nachum, L. (1999), "Measurement of productivity of professional services: an illustration of Swedish management consulting firms", *International Journal of Operations & Production Management*, Vol. 19 No. 9.

Phillips, J. (2000), *The Consultant's Scorecard*, McGraw Hill, New York, NY.

Ribeiro, D. (1996), "Consultoría para la dirección en organización, calidad, marketing y estrategia", doctoral thesis, University of Valencia, Valencia..

Samson, D. and Parker, R. (1994), "Service quality: the gap in the Australian consulting engineering industry", *International Journal of Quality & Reliability Management*, Vol. 11 No. 7.

Vanguard Consulting Ltd (1994), "BS 5750/ISO 9000/EN 29000: 1987, a positive contribution to better business", *The TQM Magazine*, Vol. 11 No. 2, p. 60.

Vloeberghs, D. and Bellens, J. (1996), "Implementing the ISO 9000 standards", *Quality Progress*, Vol. 29 No. 6, pp. 43-8.

Zeithaml, V.A., Parasuraman, A. and Berry, L. (1993), *Calidad total en la gestión de los servicios*, Díaz de Santos.

Appendix 1.

Total variance explained

Components	Initial eigenvalues			Extraction sums of squared loadings			Rotation sums of squared loadings		
	Total	Percent of variance	Cumulative percent	Total	Percent of variance	Cumulative percent	Total	Percent of variance	Cumulative percent
1	7.72	55.20	55.20	7.72	55.20	55.20	4.84	34.58	34.58
2	1.36	9.71	64.92	1.36	9.71	64.92	3.06	21.91	56.50
3	1.03	7.39	72.31	1.03	7.39	72.31	2.21	15.81	72.31
4	0.73	5.21	77.52						
5	0.68	4.86	82.38						
6	0.61	4.35	86.74						
7	0.39	2.79	89.53						
8	0.35	2.55	92.09						
9	0.31	2.24	94.33						
10	0.22	1.62	95.95						
11	0.19	1.37	97.33						
12	0.15	1.07	98.40						
13	0.14	1.05	99.46						
14	0.07	0.53	100.0						

Notes: Extraction method: Principal component analysis

Rotated component matrix[a]

	Component		
	1	2	3
b12	0.841		
b11	0.796	0.264	0.346
b13	0.790		0.407
b10	0.768		0.251
b8	0.753	0.383	
b9	0.724	0.340	
b14	0.617	0.426	0.297
b4	0.608	0.446	0.320
b6		0.470	
b5		0.851	
b7	0.344	0.794	0.343
b1		0.573	0.867
b3	0.425	0.415	0.635
b2	0.253	0.513	0.572

Notes: Extraction method: principal component analysis; Rotation method: Varimax with Kaiser normalization: [a]Rotation converged in six interations

Table AI.
Factorial analysis of the perceived quality. Principal components method with varimax rotation

Appendix 2.

Total variance explained

Components	Initial eigenvalues			Extraction sums of squared loadings			Rotation sums of squared loadings		
	Total	Percent of variance	Cumulative percent	Total	Percent of variance	Cumulative percent	Total	Percent of variance	Cumulative percent
1	8.219	63.222	63.222	8.219	63.222	63.222	5.245	40.349	40.349
2	0.894	6.875	70.097	0.894	6.875	70.097	3.867	29.748	70.097
3	0.791	6.088	76.185						
4	0.746	5.735	81.920						
5	0.483	3.713	85.633						
6	0.410	3.155	88.788						
7	0.337	2.594	91.383						
8	0.319	2.450	93.833						
9	0.236	1.814	95.647						
10	0.182	1.401	97.048						
11	0.158	1.217	98.265						
12	0.149	1.143	99.408						
13	0.077	0.592	100.0						

Notes: Extraction method: Principal component analysis

Rotated component matrix[a]

	Component	
	1	2
d9	0.911	0.288
d8	0.794	0.375
d3	0.736	0.418
d10	0.715	0.523
d11	0.690	0.462
d7	0.676	0.484
d13	0.635	0.523
d2	0.614	0.560
d12	0.575	
d1		0.854
d6	0.377	0.767
d5	0.403	0.675
d4	0.604	0.608

Notes: Extraction method: principal component analysis; Rotation method: Varimax with Kaiser normalization: [a]Rotation converged in three iteration

Table AII.
Factoral analysis of the obtained benefits. Principal components method with varimax rotation