

# Gastronomy Management: a comparative analysis of the existing quality standards

## Abstract

**Purpose:** The aim of this paper is to analyze and compare the existing quality standards in the gastronomy sector.

**Design/methodology/approach:** Based on secondary data, the most implemented quality standards within this sector are analyzed, namely the ISO 9001 focusing on the sector of 'hotels and restaurants', the ISO 22000, the 'Q' Spanish standard for the tourism sector, and the Michelin stars.

**Findings:** The results, although descriptive, show differences among them. Regarding the structure, the main difference between the management system standards and the Michelin stars is in the evaluation and certification process, as it is known and planned in the former group but not in the latter. The diffusion results confirm the increase on sectoral-focused quality standards.

**Originality/value:** Although studies analyzing the importance of sectoral standards have been published, this study is one of the first focusing on four different quality standards in the gastronomy sector. Implications for both practitioners and academia are also discussed.

**Keywords:** standards, Michelin star system, ISO 9001, 'Q' Spanish standard, gastronomy sector

## 1. Introduction

The standardization of management systems (MSs) phenomenon has grown in recent years (see ISO, 2013). According to the available data, the most widespread MS standards are those published by the International Organization for Standardization (ISO): more than a million certificates for ISO 9001 (ISO, 2013), the quality management system (QMS) and more than 250,000 organizations certified against ISO 14001 (ISO, 2013), the environmental management system (EMS). Other management system standards (MSSs) have also been implemented and certified within organizations, such as those for occupational health and safety (e.g., OHSAS 18001), social responsibility (e.g., SA 8000), food safety (e.g., ISO 22000), energy (ISO 50000), among others.

One of the hot topics about the future of these MSSs is analyzing its diffusion. It could be analyzed from three main points of view (Llach et al., 2011; Marimon et al., 2011, Alonso-Almeida et al., 2013): factors (i.e., why these MSSs widespread within and outside organizations and countries), model (i.e., the different stages of diffusion and evolution forecasting), and scope (i.e., to what extent is the analysis done: word level, country level, sectoral level).

This last aspect of diffusion is increasing its interest in the academia and management field as it can condition the strategy of both normalization bodies and organizations. According to the existing literature, it is forecasted that sectoral MSSs will take the place of the generic MSSs such as ISO 9001 and ISO 14001. In this line, one of the most analyzed sector, because of its normalization level at all degrees, has been the hospitality sector in general and some focusing on hotels (see e.g., Casadesús et al., 2010; Alonso-Almeida et al., 2013).

Taking this into consideration, the aim of this paper is to analyze and compare the existing quality standards regarding structure and diffusion in another area of the hospitality sector that has increased in importance in recent years: the gastronomy sector. An additional quality standard not analyzed in-depth yet is the Michelin stars system.

The remaining of the paper is structured as follows. Next to this section, the literature review is posed considering both the structure and diffusion of quality standards within the gastronomy sector. Then, the methodology and results are presented and finally the main conclusions are discussed.

## **2. Literature review**

The literature review is divided into two subsections. The first is presenting the analysis of the quality standards, based on their structure. The second presents the diffusion of MSSs.

### ***2.1. Quality standards: structure and main characteristics***

The quality standards analyzed in this paper are focused on the gastronomy sector, i.e.: quality management system (QMS) based on the generic ISO 9001 and the sectoral ISO 22000 for food safety, the Spanish 'Q' and the Michelin stars system.

The main aspect among them is that the ISO standards as well as the Spanish 'Q' are management systems, affecting the process, and the Michelin stars are awards focused more on the result than in the process, thus, the scope is different. Table 1 shows the common dimensions of these four quality standards in the sector as proposed by Heras (2006).

Table 1 here

In relation to the six dimensions of the table, main differences are found regarding the sector, the geographical scope and the content. Only ISO 9001 is a generic standard than can be implemented in any organization regardless sector and size (ISO, 2008), while the rest are related to the food sector and at the same time, only the Spanish 'Q' is national (ICTE, 2014). On the other hand, the content is different among the management systems and the Michelin stars. The management systems' aim is to specify the requirements to implement, document, maintain and improve a quality management system (ISO, 2005a, 2008, ICTE, 2014), while the Michelin stars system aims to recognize the fine dining restaurants (Michelin, 2013).

The most important differences are in the implementation and certification processes. For the first aspect, the management systems follow a similar implementation process that can be summarized into (ISO, 2005a, 2008; Biasini, 2012; ICTE, 2014): analysis of the initial situation, development (identification of processes and their interrelation, documentation creation and resources allocation), implementation (training, internal auditing and improvement). A consultant can help in the implementation. In the case of the Michelin stars system, the restaurant has not a specific guideline to implement a specific process in order to achieve the award so the restaurants have to do their best because the inspectors will evaluate only the final result (Michelin, 2013).

Regarding the certification process, although voluntary in all cases, it is active in the case of management systems but passive in the Michelin stars system. For QMS standards (Casadesús et al., 2005; Claver et al., 2011) those organizations willing to obtain the certificate need to be evaluated by a certification body. The organizations apply for the certification and after choosing the certification body both organizations schedule and plan the audit. During the audit both parties collaborate and communicate, the organization audited knows the content of the audit and the criteria applied. After the audit, the third-party auditors deliver the final report to the organization and discuss the results. In the case of a positive evaluation, the organization achieves the certificate and is registered. A follow-up audit is done the year after and the certificate should be renewed in 3-years' time. In the case of a negative evaluation, the organization needs to implement corrective and preventive actions and be evaluated again.

The Michelin stars system could be labeled as a single-side process, as the restaurants do not know the day of the audit neither the final report. The restaurants evaluated are those registered in the guide and some of them are evaluated to be considered for the award. The evaluation criteria are objective and the most important aspects are the quality of products, creativity and presentation, the cook and the taste (Apicius, 2013). But it is also important the regularity of the team and the relationship quality/price (Ottenbacher and Harrington, 2007). The evaluation is anonymous as the inspector acts as a client and pays the bill. The restaurant is then evaluated and in some occasions, the inspector presents itself to the restaurant and comments on some aspects of the service (Apicius, 2013). No final report or any other feedback is provided to restaurants and they only know the result when the guide announces the restaurants awarded. Differently from the management systems, there are three levels of award: one star is for good restaurants in its own category, two stars for "excellent cooking which worth a detour" and three stars for an "exceptional cuisine, worth a special trip" (Michelin, 2013). In the case of the Michelin system, each year the restaurants are evaluated and can renew the award, achieving a higher recognition or not renewing it.

Thus, although these differences should be taken into consideration when comparing these quality standards, all of them are devoted to improve the organization's processes and results to satisfy and delight their customers.

## ***2.2. Diffusion of management system standards***

The diffusion of MSSs has been widely analyzed as it allows forecasting their future and planning the best strategy for normalization bodies, organizations and academia.

Three are the main points of view to study this phenomenon: diffusion factors, model of diffusion and scope of analysis. Regarding the first aspect, it refers to those characteristics that explain and help in the diffusion of MSSs, e.g., because of commercial exchange activities (Corbett and Kirsch, 2004), direct foreign investment, institutional support (Delmas, 2002), cultural affinity, experience with previous standards (Delmas and Montiel, 2008), supply chain (Corbett, 2006), stakeholders' pressure (Xia et al., 2008), organizational characteristics (Hashem and Tann, 2007), among others, have been discussed as enablers of diffusion of contagion effect to expand these MSSs across organization, sector and country barriers.

The second refers to the model this diffusion follows. There is consensus that the S-curve is the model that fit better regardless the scope of diffusion (see e.g., Marimon et al., 2006; Casadesús et al., 2008). This model also allows determining different stages across the pattern: starting, taking-off, saturation and retrocessive (Marimon et al., 2009; Franchescini et al., 2010). The first stage refers to the starting point of the process, when only a few organizations are certifying these MSSs (beginners) and ends when a critical mass of certificates is achieved. The second stage starts when the number of certificates increases fast and exponentially, their growth takes-off, and ends when the great majority of organizations has implemented and certified the MSSs. The next phase is the last of positive growth, as it considers those organizations that does not have the certification, a littler amount, and those certifying in the last place (laggards). Once this situation is achieved, the last stage, retrocessive, contains those organizations that are not renewing for whatever the reason; the certificate of the MSS, in other words, the decertification process begins (see ISO, 2013).

The last aspect of diffusion is the scope. It refers to the level of analysis, i.e., considering the diffusion process at an international level, country level or sectoral level, for example. Studies analyzing the diffusion of MSSs, specifically ISO 9001 and ISO 14001, at international level are the most common and allow introducing the model and its stages and analyzing and comparing the diffusion among countries, such as in Franceschini et al. (2004, 2006, 2010), Marimon et al. (2006, 2009), Casadesús et al. (2008) and Heras-Saizarbitoria et al. (2013). At national level, Franceschini et al. (2008) analyzed the diffusion in Italy, and Casadesús et al. (2010) and Alonso-Almeida et al. (2013) analyzed it in Spain. The latter studies are also focusing in a specific sector, the hospitality sector. In Llach et al. (2011) and Marimon et al. (2011), the international diffusion model of ISO 9001 and ISO 14001 is analyzed considering sectors of activities.

As it is understood from the previous words, all diffusion aspects are correlated and evidence of that are the possible scenarios once the saturation point has been achieved (see also Bernardo et al., 2013). The new S-curve could be based on:

- a) The renewal of an updated version of the already implemented MSSs. This scenario means increasing the internalization of the known standards to take profit of the experience in its management (see e.g., Heras-Saizarbitoria, 2011)
- b) The certification of an existing sector-specific standard that fits better to the organizations' activities, for example ISO 22000 or BRC for food safety (Gotzamani and Kafetzopoulos, 2012), 'Q' Spanish trade in Spain for tourism (Casadesús et al., 2008; Alonso-Almeida et al., 2013), among others

- c) The implementation of a new standard for the organization that makes it more efficient, e.g., a social responsibility MSs (Castka and Balzarova, 2008), an innovation management MS (Coelho and Matias, 2010), an energy MS (Coelho et al., 2003), among other possibilities.

According to the existing studies, the tendency seems to be the decertification (not renewing the certificate) of the generic MSSs such as ISO 9001 and ISO 14001 (see e.g, Marimon et al., 2009, 2011; Franchescini et al., 2010), to invest the effort and money to implement and certify sectoral MSSs, more in line and adapted to each sector demands (see e.g., Llach et al., 2011, Alonso-Almeida et al., 2013).

### **3. Methodology**

The methodology of this paper could be labeled as hybrid as both qualitative and quantitative data have been used. Secondary data was used in both methodologies.

In order to analyze and compare the structure of the selected quality standards, a content analysis of the norms and complementary information has been done (see also Alonso-Almeida et al., 2013). The comparison is based on the different phases of implementation and evaluation of compliance.

To analyze and compare the diffusion of these quality standards, quantitative data from the available resources has been used, i.e., ISO survey data (as in previous studies on diffusion such as Marimon et al., 2009, 2011; Alonso-Almeida et al., 2013) and Michelin stars awarded. Although the data for the Spanish Q was demanded, no answer was received. The use of these data is limited as not all the years are provided (ISO 9001 certificates for 2003 and 2005 are missing data) and the period of time is not the same for the three standards (from 2007 on, when ISO 22000 was published, all data is available). Thus, the conclusions extracted from this comparison should be taken with caution.

The study is focusing on Spain and the gastronomy sector. The former because it has a long experience in quality MSSs implementation (see ISO, 2013) and the latter, because it has grown in importance both in recognition and as economic contributors (INE, 2014). Specifically for Spain, the number of certificates and recognitions of quality standards has increase and it is considered the leading country in terms of gastronomy and awards.

### **4. Results**

The results are presented separately for the structure analysis and diffusion.

#### ***4.1. Quality standards structure***

The results, although descriptive, show differences in the implementation of these standards. The implementation of ISO 9001, ISO 22000 and 'Q' standard are similar, as they are published guidelines that organizations can implement and certify. The Michelin stars system is different as the requirements to be met to obtain the star are not specifically published. However, all of them are compatible and a restaurant can have

the three management systems implemented and certified and be awarded with one-two-three Michelin star.

The most important difference is in the evaluation stage. While the quality management system standards certification audits are planned and both the auditee and auditor know all the aspects to be analyze, in the Michelin stars system only the inspector knows this information, as the evaluation in each restaurant is anonymous, so, the restaurants do not know in advance that they will be evaluated.

This last aspect is important as the internalization and compliance with requirements are different. Internalization phenomenon has been analyzed in the literature (see e.g., Heras-Saizarbitoria, 2011) as the implementation and management of these quality practices can become a routine or be superficial. Although it is obvious that a good implementation and internalization is better to get benefits this could be independent of passing the certification audit (Dogui et al., 2014). Thus in the case of management system standards the certificate can be obtained if the documentation is prepared before the audit that is known but it is not the case of the Michelin system, as the restaurant does not know when the audit will be done and the quality performance and compliance should be of high level always (see Figure 1).

Another aspect to consider is that in the management system standards case, those organizations with a negative evaluation have the chance to recover and implement corrective and preventive actions and be evaluated again. The Michelin stars system does not give this opportunity to those restaurants not awarded.

Figure 1 here

To sum up, the Michelin stars system is a recognition based on the result and the management systems are improving the process that if it is well implemented, will lead to more satisfied customers. In addition, an important difference is that Michelin does not publish the evaluation criteria or guideline understood as a standard as ISO is defining it: “document established by consensus and approved by a recognized institution that provides requirements, specifications, guidelines or characteristics that can be used consistently to ensure that materials, products, processes and services are fit for their purpose specific criteria to follow” (ISO, 2014), but these criteria are objective enough to be used as indicators to measure the result. Nevertheless, all of them, management systems or recognitions, share some commonalities and one is giving evidences of the quality level of the organization, in this case, of the restaurant.

#### ***4.2. Quality standards diffusion***

The three quality standards with available data are analyzed and compared in this section. First, all data is referring to Spanish certificates and Michelin stars. For ISO 9001 and ISO 22000 all certificates where considered, although it could mean that the same organization has more than one certificate. The same was considered regarding the Michelin stars, as the data used refers to the total amount of stars awarded, and not the restaurants awarded. These results are the first step of the analysis as more data are needed to conclude the study.

Figure 2 shows the evolution of the three standards. Considerations about the figure should be posed. The scales are different to make the comparison possible. Thus, ISO certificates are scaled in the main axis, while Michelin stars are scaled in a secondary axis.

Regarding the ISO certificates by sectors, the first aspect to be considered is that none of them is referring specifically to restaurants and thus makes this analysis to be taken with caution. Knowing this limitation, the growth rate of ISO 9001 certificates was high until 2008 when the growth seems to stabilize. It seems that this standard could be reaching the saturation point (in line with previous studies on diffusion of management systems, such as in Llach et al., 2011, Marimon et al., 2011).

Figure 2 here

The evolution of ISO 22000 certificates is shorter (it was first published in 2005) but it seems clear that the growth rate is higher than for the ISO 9001. This is in accordance with the tendency in those sectors with a specific quality standard in which organizations prefer to implement and certify sectoral standards because they fit better with their activities and those more generic as is ISO 9001 (see e.g., Casadesús et al., 2010; Alonso-Almeida et al., 2013). Also, the experience of having ISO 9001 or another management system implemented before the implementation of ISO 22000, published later, can explain the fast growth of the certifications (Corbett and Kirsch, 2001, 2004; Vastag, 2003). It can be extracted from the figure that in a short period of time, it looks like the ISO 22000 certificates will overpass the ISO 9001 certificates in this sector.

The evolution of the Michelin stars in Spain has been smoother. From the beginning of the period analyzed until 2004, the growth rate was almost constant, but from 2005 on the number of stars was grown significantly although not at the same level as for ISO certificates. The growth rate for the last years analyzed seem to be stable but the available data for 2013 and 2014 show an increase in the stars awarded (178 for 2013 and 192 for 2014). Considering not the total of stars but the restaurants, in 1998 90 restaurants were awarded (79 restaurants with one star, 9 restaurants with two stars and 2 restaurants with three stars) and the number increases until 139 in 2012 (117 restaurants with one star, 17 restaurants with two stars and 5 restaurants with three stars). This evolution shows a tendency of the gastronomic restaurants to be awarded but also exemplifies the methodology of the institution as restaurants are passive in the process.

To sum up and comparing the evolution of the three quality standards, it seems that both sectoral standards, although different in objectives and methodology, are growing and the more generic standard, i.e., ISO 9001, is achieving the saturation point. These results contribute to the existing literature defending that a sector-specific standard is preferred by the organizations as they allow a better fit with the organization's activities as well as giving them the opportunity to differentiate from competitors and gaining competitive advantage (see e.g., Llach et al., 2011; Marimon et al., 2011; Alonso-Almeida et al., 2013).

## 5. Conclusions

The aim of this paper is to analyze and compare the existing quality standards in the gastronomy sector. Based on a hybrid methodology combining qualitative and quantitative data, the following conclusions could be extracted.

First, there are multiple quality standards on the gastronomy sector that are compatible.

Second, in terms of structure and characteristics, points in common are the assurance of quality in both processes and results and recognition. Main differences are in terms of implementation and certification.

The quality management system standards specify the implementation, documentation, maintenance and improvement of a quality management system, its implementation and certification are voluntary, and all parties are involved in the certification process. The certificate, renewed every three years, assures compliance with the standard requirements. Third-party audits are planned and all participants know the evaluation criteria. Michelin stars' system refers to the certification process as there are no guidelines for the implementation of the criteria analyzed. The external evaluation by the Michelin inspector is anonymous and the only information the restaurants know is if they are awarded or not. The award is renewed annually. Both methodologies, although the aims of the standards are different, have positive and negative aspects. For organizations it is better to know the criteria and have feedback to improve but knowing when they are going to be evaluated could develop a negative behavior and only maintain the system to pass the audit. The need to keep up-to-date the quality requirements could be the best assurance for improving clients' satisfaction.

In terms of diffusion, although the results obtained should be taken with caution, the evolution of the quality standards evidences the tendency of an increasing implementation of sectoral quality standards rather than generic like ISO 9001. In relation to the previous comment, the need to be certifiable standards should be analyzed in future research.

Implications for the standardization institutions are based on the evaluation process. The gastronomy sector could be a pilot test to implement a hybrid methodology to assure the compliance of quality standards requirements and improve clients' satisfaction. Another aspect that has been discussed in the literature is the auditors' independence and competence that could be improved by a better evaluation process. Managers should consider the possibility of decertify generic standards, which is achieving the saturation point, and invest in those sector-specific standards that fit better with their activity and allow them to delight customers' requirements. In addition the sectoral standards give the opportunity to differentiate from competitors leading to the gain of competitive advantage. The main problem for them is also the proliferation of many quality standards with different criteria that are considered more as image than excellence.

One of the limitations of this study is the available data, as the evolution of all the quality standards could not be analyzed. In addition there are not enough Michelin



information about criteria, process and evaluation, so it is difficult to compare the Michelin star system with the MSs. Also, Spain is the only country analyzed.

Finally, future research is based on analyzing in-depth the Michelin stars system in order to be able to compare the criteria and propose hybrid evaluation criteria.

## References

- Alonso-Almeida, M.M., Marimon, F., Bernardo, M. (2013), "Diffusion of Quality Standards in the Hospitality Sector", *International Journal of Operations and Production Management*, Vol. 33, No. 5, In Press.
- Apicius (2013), *Cuaderno de Gastronomía y Alta Cocina*, Accessed: 3 April 2014: [www.apicius.es](http://www.apicius.es)
- Bernardo, M., Gotzamani, K., Gianni, M. (2013), *Certification Maturity As A Diffusion Factor For Management Systems Integration*, 20th EurOMA conference, Dublin, June 09-12 2013
- Biasini, V. (2012) "Implementation of a quality management system in a public research centre". *Acreeed Qual Assur*, 17, pp. 621-626
- Casadesús, M., Heras, I., and Merino, J. (2005), *Calidad práctica: una guía para no perderse en el mundo de la calidad*, Prentice-Hall Financial Times, Madrid, Spain
- Casadesús, M., Marimon, F. and Heras, I. (2008), "ISO 14001 diffusion after the success of the ISO 9001 model", *Journal of Cleaner Production*, Vol. 16, No. 16, pp. 1741-1754.
- Casadesús, M., Marimon, F., Alonso, M. (2010), "The future of standardized quality management in tourism: evidence from the Spanish tourist sector", *The Service Industries Journal*, Vol. 30, No. 4, pp. 2457-2474.
- Castka, P. and Balzarova, M.A. (2008), "ISO 26000 and supply chains - On the diffusion of the social responsibility standard", *International Journal of Production Economics*, Vol. 111, No. 2, pp. 274-286.
- Claver, E., Molina, J., and Tari, J. (2011), *Gestión de la calidad y gestión medioambiental: fundamentos, herramientas, normas ISO y relaciones*, 2a edn, Piramide, Madrid, Spain
- Coelho, D.A., Matias, J.C.O. and Santo A.E. (2003), "Extending certification to energy management systems: a contribution to improve energy efficiency in industry", *ECEEE 2003 Summer Study Proceedings – Time to turn down energy demand*, Panel 4. Building the bridge from lab to customer, pp. 703-708.
- Coelho, D.A. and Matias, J.C.O. (2010), "Innovation in the organisation of management systems in Portuguese SMEs", *International Journal of Entrepreneurship and Innovation Management*, Vol. 11, No. 3, pp. 324-329.
- Corbett, C. (2006), "Global Diffusion of ISO 9000 Certification through Supply Chains", *Manufacturing & Service Operations Management*, Vol. 8, No. 4, pp. 330-350.
- Corbett, C.J., and Kirsch, D.A. (2001), "International diffusion of ISO 14000 certification", *Production and Operations Management*, Vol. 10, No. 3, pp. 327-342.
- Corbett, C., and Kirsch, D. (2004), "Response to "Revisiting ISO 14000 Diffusion: A New "Look" at the Drivers of Certification", *Production and Operations Management*, Vol. 13, No. 3, pp. 268-271.
- Delmas, M. (2002), "The diffusion of environmental management standards in Europe and in the United States: An institutional perspective", *Policy Sciences*, Vol. 35, No. 1, pp. 91-119.

- Delmas, M., and Montiel, I. (2008), "The Diffusion of Voluntary International Management Standards: Responsible Care, ISO 9000, and ISO 14001 in the Chemical Industry", *The Policy Studies Journal*, Vol. 36, No. 1, pp. 65-93.
- Dogui, K., Boiral, O. and Heras-Saizarbitoria, I. (2014), "Audit Fees and Auditor Independence: The Case of ISO 14001 Certification", *International Journal of Auditing*, Vol. 18, pp. 14-26.
- Franceschini, F., Galetto, M. and Gianni, G., (2004), "A new forecasting model for the diffusion of ISO 9000 standard certifications in European countries", *International Journal of Quality & Reliability Management*, Vol. 21, No. 1, pp. 32-50.
- Franceschini, F., Galetto, M. and Cecconi, P. (2006), "A worldwide analysis of ISO 9000 standard diffusion: Considerations and future development", *Benchmarking: An International Journal*, Vol. 13, No. 4, pp. 523-541.
- Franceschini, F., Galetto, M., Mastrogiacomo, L. and Viticchie, L. (2008), "Diffusion of ISO 9000 and ISO 14000 certification in Italian commodity sectors", *International Journal of Quality & Reliability Management*, Vol. 25, No. 5, pp. 452-465.
- Franceschini, F., Galetto, M., Maisano, D. and Mastrogiacomo, L. (2010), "Clustering of European countries based on ISO 9000 certification diffusion", *International Journal of Quality & Reliability Management*, Vol. 27, No. 5, pp. 558-575.
- Gotzamani, K. and Kafetzopoulos, D. (2012), "Measuring the effectiveness of food quality and safety systems – Critical factors for effective implementation and their impact on food companies performance", in Bernardo, M. (2012), *Quality management and beyond: the current situation and future perspectives*, Documenta Universitaria, GITASP 8, Girona, Spain, pp. 93-108.
- Hashem, G. and Tann, J. (2007), "The Adoption of ISO 9000 Standards within the Egyptian Context: A Diffusion of Innovation Approach", *Total Quality Management & Business Excellence*, Vol. 18, No. 6, pp. 631-652.
- Heras, I. (coord.) (2006), *ISO 9000, ISO 14001 y otros estándares de gestión: pasado, presente y futuro. Reflexiones teóricas y conclusiones empíricas desde el ámbito académico*, Civitas, Madrid, Spain
- Heras-Saizarbitoria, I. (2011), "Internalization of ISO 9000: an exploratory study", *Industrial Management & Data Systems*, Vol. 111, NO. 8, pp.1214 - 1237
- Heras-Saizarbitoria, I., Arana, G. and Cilleruelo, E. (2013), "Adoption of ISO 9000 management standard in EU's transition economies: the case of the Baltic states", *Journal of Business Economics and Management*, Vol. 14, No. 3, pp. 481-499
- ICTE (2014), La Marca Q de Calidad Turística, Accessed: 10 Abril 2014: [www.calidadturistica.es](http://www.calidadturistica.es)
- INE (2014), Instituto Nacional de Estadística, Accessed: 15 May 2014: [www.ine.es](http://www.ine.es)
- ISO (2001), *The ISO Survey of ISO 9000 and ISO 14000 Certifications*, International Organization for Standardization, Geneva, Switzerland
- ISO (2003), *The ISO Survey of ISO 9000 and ISO 14000 Certifications*, International Organization for Standardization, Geneva, Switzerland
- ISO (2005a), *ISO 22000 Food safety management systems – Requirements for any organization in the food chain*, International Organization for Standardization, Geneva, Switzerland
- ISO (2005b), *The ISO Survey of ISO 9000 and ISO 14000 Certifications*, International Organization for Standardization, Geneva, Switzerland
- ISO (2007), *The ISO Survey of ISO 9000 and ISO 14000 Certifications*, International Organization for Standardization, Geneva, Switzerland
- ISO (2008), *ISO 9001 Quality management systems - Requirements*, International Organization for Standardization, Geneva, Switzerland

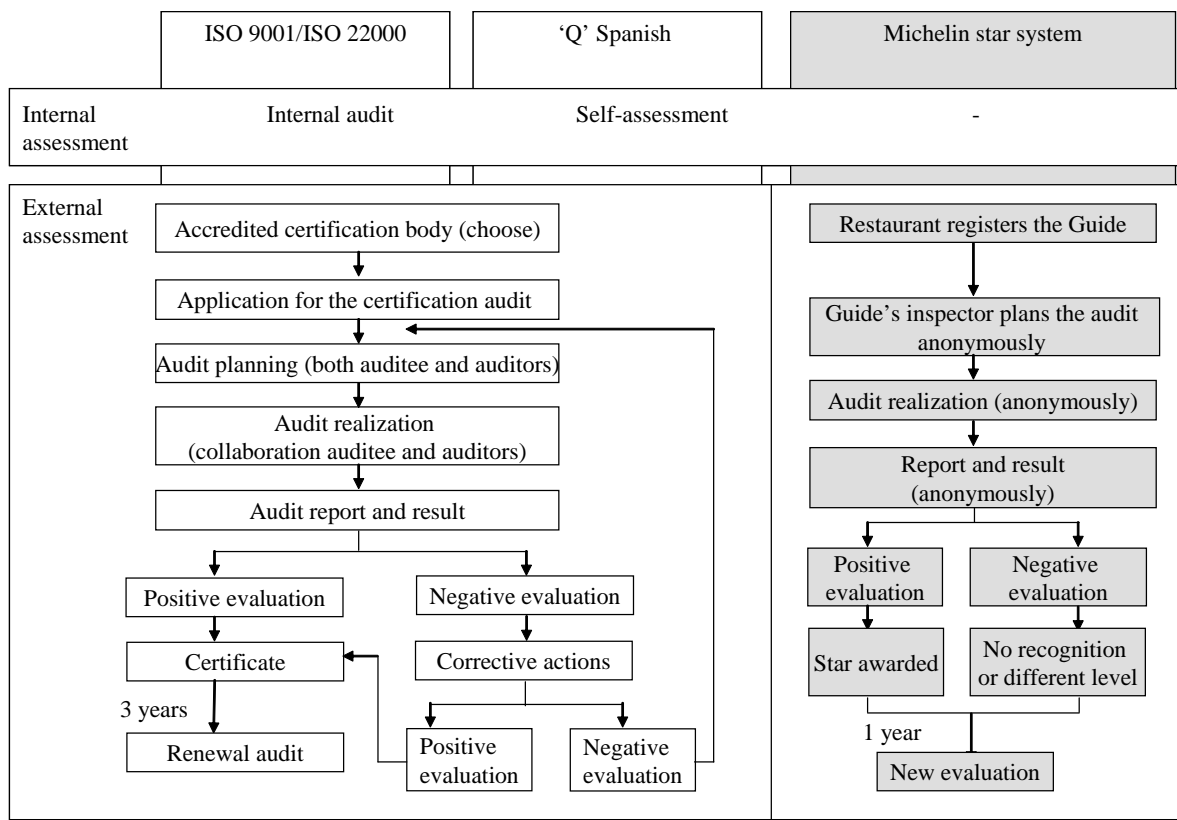
- ISO (2009), *The ISO Survey of ISO 9000 and ISO 14000 Certifications*, International Organization for Standardization, Geneva, Switzerland
- ISO (2011), *The ISO Survey of ISO 9000 and ISO 14000 Certifications*, International Organization for Standardization, Geneva, Switzerland
- ISO (2013), *The ISO Survey of Management System Standard Certifications - 2012*, International Organization for Standardization, Geneva, Switzerland.
- ISO (2014), International Organization for Standardization, Accessed: 9 July 2014: [www.iso.org](http://www.iso.org)
- Johnson, C., Surlémont, B., Nicod, P. and Revaz, F. (2005), “Behind the stars: a concise typology of Michelin restaurants in Europe”, *Cornell Hotel and Restaurant Administration Quarterly*, Vol. 46 No. 2, pp. 170-187.
- Llach, J., Marimon, F. and Bernardo, M. (2011), “ISO 9001 diffusion analysis according to activity sectors”, *Industrial Management & Data Systems*, Vol. 111, No. 2, pp. 298 – 316.
- Marimon, F., Casadesús, M. and Heras, I. (2006), “ISO 9000 and ISO 14000 standards: An international diffusion model”, *International Journal of Operations and Production Management*, Vol. 26, No.2, pp. 141-165.
- Marimon, F., Casadesús, M. and Heras, I. (2009), “ISO 9000 and ISO 14000 standards: A projection model for the decline phase”, *Total Quality Management*, Vol. 20, No. 1, pp. 1-21.
- Marimon, F., Llach, J. and Bernardo, M. (2011), “Comparative analysis of diffusion of the ISO 14001 standard by sector of activity”, *Journal of Cleaner Production*, Vol. 19, No. 15, pp. 1734–1744.
- Michelin (2013), *La guía MICHELIN España & Portugal*, Michelin, Madrid, Spain
- Ottenbacher, M. and Harrington, R.J. (2007), “The innovation development process of Michelin-starred chefs”, *International Journal of Contemporary Hospitality Management*, Vol.19 No.6, pp 444-460.
- Vastag, G. (2003), “Revisiting ISO 14000: a new “Look” at the drivers of certification”, *Working Paper*, Indiana University
- Xia, J., Wang, J., Wang, Y. and Xing, R. (2008), “Stakeholder pressures and the global diffusion of the ISO 14001 initiative: a resource dependence perspective”, *International Journal of Sustainable Society*, Vol. 1, No. 1, pp. 4-28.

**Table and figures**

**Table 1. Quality standards common elements**

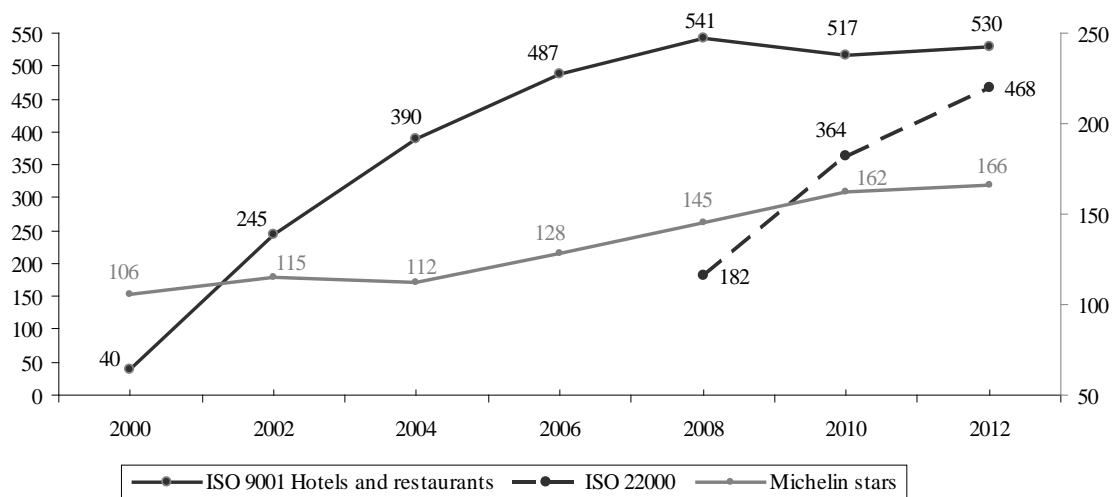
	ISO 9001	ISO 22000	Spanish 'Q'	Michelin stars
Geographical dimension	International	International	National	International
Promulgating body	ISO	ISO	ICTE	Michelin
Sector	General	Food chain sector	Tourism sector	Gastronomy sector
Organizational extend	Entire organization	Entire organization	Entire organization	Entire organization
Certiability	Certiabile	Certiabile	Certiabile	Certiabile
Content	Implementation and documentation	Implementation and documentation	Implementation and documentation	Performance (results)

Source: Based on Heras (2006), ISO (2005a, 2008), ICTE (2014), Michelin (2013)



**Figure 1. Quality standards external assessment comparison**

Source: Own elaboration based on ISO (2005, 2008), Michelin (2013) and ICTE (2014).



**Figure 2. Evolution of quality standards**

Source: ISO (2001, 2003, 2005b, 2007, 2009, 2011, 2013), Michelin (2013).