How do firms integrate management systems? A comparative study

Journal: Total Quality Management & Business Excellence

Marta Blasco-Torregrosa[a], Elena Perez-Bernabeu[b], María Palacios-Guillem[a], Víctor Gisbert-Soler[b]

[a]Ph.D School, Universitat Politècnica de València, Valencia, Spain; [b]Department of Applied Statistics, Operations Research and Quality Control (Campus of Alcoy), Universitat Politècnica de València, Alcoy, Spain,

Corresponding author: marblato@epsa.upv.es (M. Blasco-Torregrosa); elenapb@eio.upv.es (E. Perez-Bernabeu); mapagui1@epsa.upv.es (M. Palacios-Guillem); vgisber@eio.upv.es (V. Gisbert-Soler)

How do firms integrate management? A comparative study

The aim of this article is to study how Spanish firms implement and integrate the different management systems by a comparison of Spanish firms located in Spain and Spanish firms in Czech Republic. Two empirical studies were conducted in the aforementioned two countries. A questionnaire was sent to firms in both countries that comply with a specific requirement: that they had implanted at least two management systems (no matter which ones) to carry out the integration. This research will determine the contents of the integration plan, the integration methodology, the resources (human resources and procedures) involved in the different management systems as well as the main benefits and difficulties found during the integration process. This paper is one of the first studies where the location of Spanish firms is used as a differentiating factor to compare the Integrated Management System within two European countries, in this case Spain and Czech Republic.

Keywords: Integrated Management System (IMS), Management System (MS), integration, methodology, Spain, Czech Republic

Introduction

The adoption of standards for management systems (MSs) has increased in the last years (Poltronieri, Gerolamo, Dias, & Carpinetti, 2018), as firms are keen on improving their global management (Bernardo, Casadesus, Karapetrovic, & Heras, 2008).

The implementation and integration of MSs have increased and this is mainly because of the success in the implementation and certification of the quality MS (QMS) and the environmental MS (EMS) (Llonch, Bernardo, & Presas, 2018). According to the ISO Survey of Management System Standard Certifications 2017, the number of certificates delivered in 2017 for the two most implemented standards of the ISO, that is, the QMS ISO 9001 and EMS ISO 14001 standards, a total of 1,058,504 valid certificates were reported for ISO 9001 a decrease of 4% on last year. A total of 362,610 valid certificates were reported for ISO 14001 up 5% on last year (ISO,

2018b). Specifically, Spanish firms are listed in the world "top ten" of the main certifications. Spain is the seventh country in the world and the fourth in Europe for certificates of QMS. Spain counts on 31.984 certificates in terms of ISO 9001 and 13,053 certificates in terms of ISO 14001. Contrary to that, Czech Republic (CZ) counts on 11,180 certificates in terms of ISO 9001, ranking sixteenth in the world and eighth in Europe and 4,312certificates in terms of ISO 14001 (ISO, 2018a).

The aim of this paper is to study the manner in which Spanish firms have integrated MSs through an empirical study in Spanish firms located in Spain and Spanish firms located in CZ.

The paper is divided in the following parts: firstly, a literature review of the integration methodology, the integration benefits and difficulties and international issues; followed by a research methodology, the results of this research and, finally, some conclusions.

Literature review

Within this context, the concept of integration was born to cope with the proliferation of management systems standards (MSS) and the respective MSs which in turn are adopted by organizations (Gianni & Gotzamani, 2015). Multiple certifiable MSs can function separately. However, they are counterproductive, difficult to manage, and involve collaborators which invariably lead to the question of whether they should prioritize either the productive processes or the excessive bureaucracy they generate (De Oliveira, 2013). This situation leads the organizations which have multiple MSs in place to consider the integration of these systems as a way to better manage them and in turn exploit the related synergies (Douglas & Glen, 2000; Karapetrovic & Casadesús, 2009; Karapetrovic & Jonker, 2003; Karapetrovic & Willborn, 1998; Wilkinson & Dale, 1999b; Zutshi & Sohal, 2005a). Integration can occur in different ways and in different

levels (Poltronieri et al., 2018). All these MS can be integrated into a single MS: an integrated management system (IMS) (Bernardo et al., 2008). Over the past 15 years, when ISO 14001 was published, the concept of IMS is emerged in the organization management. It was one of the major requirements for organization to ensure survival, cost effectiveness and hereby achieving a framework for decisions complying with corporate policies and strategy (Dahlin & Isaksson, 2017). However, the process of integration of MSs is not itself "standardized" for instance, by an international standard that addresses the best way to carry it out (Bernardo, Casadesus, Karapetrovic, & Heras, 2012b).

Firstly, several integration methodologies have been proposed by both academic and standardization bodies. Academics have elaborated their own methodologies based on composed models (De Oliveira, 2013; Karapetrovic, 2005; Pal Pandi, Rajendra Sethupathi, & Jeyathilagar, 2016). In another study, four different methodologies were proposed (Karapetrovic, Casadesús, & Heras, 2006): process map, PDCA, common elements and organizations' own models (Bernardo, Gianni, Gotzamani, & Simon, 2017). Certain standardization bodies have launched national integration norms. ISO released a handbook (ISO, 2008), and has implemented the High Level Structure (HLS), i.e., a common structure in all the new and updated MSSs published that enhances their integration (Bernardo et al., 2017). IMS studies have been conducted in many countries, for example, in Greece (Bernardo Vilamitjana, Gotzamani, Vouzas, & Casadesús Fa, 2016), Austria (Fresner & Engelhardt, 2004), Italy (Salomone, 2008), Pakistan (Asif, Fisscher, Joost de Bruijn, & Pagell, 2010), Portugal (J. P. T. Domingues, Sampaio, & Arezes, 2015; Santos, Mendes, & Barbosa, 2011), the USA (Ivanova, Gray, & Sinha, 2014), United Kingdom (Griffith & Bhutto, 2009). More specifically, there are quite a

few studies in Spain (Bernardo, Casadesus, Karapetrovic, & Heras, 2009; Llonch et al., 2018; Simon, Karapetrovic, & Casadesus, 2012) and very few in CZ (Labodová, 2004).

On the other hand, the integration of certifiable MSs can qualify firms, enabling their participants to have higher productivity at lower cost, while preserving their employees' health and the environment (Kim, Sting, & Loch, 2014; Klute-Wenig & Refflinghaus, 2015). According to the existing literature (Bernardo et al., 2017), the key integration benefits are (Bernardo, Simon, Tarí, & Molina-Azorín, 2015; J. P. T. Domingues et al., 2015) related to a greater flexibility and opportunities to include other systems (Beckmerhagen, Berg, Karapetrovic, & Willborn, 2003), the avoidance of duplication of efforts (Zeng, Xie, Tam, & Shen, 2011), a better use of synergies between the standards (Simon, Bernardo, Karapetrovic, & Casadesus, 2013), and the reduction of audits resources through integrated audits (Beckmerhagen et al., 2003) and multi-function auditors (Douglas & Glen, 2000). In a recent study, it is detailed that the benefits of integrating the MSs into an IMS are: improve business focus, manage business risk, less conflict between individual management systems, reduced duplication and bureaucracy, effective and efficient internal and external audits, simplify certification process, save human resource, decrease management cost, decreases complexity of internal management, increase cultural compatibility, facilitate continuous improvement, time saving, operational benefits, better external images, improve customer satisfaction, enhance employee motivation (Muzaimi, Chew, & Hamid, 2017). On the other side, the integration difficulties usually encountered are related to the differences in the general elements of the standards and their specific requirements (Bernardo, Casadesus, Karapetrovic, & Heras, 2012a), the lack of certification support (Zeng, Shi, & Lou, 2007) and resources (Asif, de Bruijn, Fisscher, Searcy, & Steenhuis, 2009; Gianni & Gotzamani, 2015), especially human resources

(Karapetrovic et al., 2006), and the problems related to organizational culture (Wilkinson & Dale, 1999a).

Therefore, organizations are increasingly resorting to the implementation and integration of several MSs in order to benefit from certain advantages (P. Domingues, Sampaio, & Arezes, 2017) although there are some obstacles in implementing the IMS, that each organization must avoid (P. Domingues et al., 2017). So, organizations must consider these favourable and unfavourable aspects when starting the process of integration and implementation of MSs.

Besides, there are other crucial issues that depends on each country. So, you can also appreciate differences in the commercial relations, organizational culture and national legislative framework. There can be commercial differences. Although Spain has much more population than CZ, this one (30th) is positioned ahead of Spain (28th) in terms of business creation. Moreover, the trade balance is positive for CZ, unlike that of Spain, which is negative, mainly due to the number of exports and imports (Countryeconomy, n.d.). Commercial relations between CZ and Spain are getting closer: Spain ranks 10th as a customer of products from CZ, and 14th as a supplier country. Currently, over 2% of Czech exports are directed to Spain. Organizational culture is widely studied and considered a crucial determinant of the organization's performance (Mazur & Zaborek, 2016) and it differs across organizations and even among departments of the same organization (Mazur & Zaborek, 2016). Czech business culture shares some characteristics with other Eastern European cultures and has undergone a significant change since the end of Communism. Formality and hierarchy are two of the most prevailing characteristics of Czech business culture (Export Entreprises S.A., 2018a). In Spain, saving face, family, proximity and aversion to risk are major concepts in business. It is common that Spanish businessmen treat their

counterparts as their friends. Spaniards are known for being more relaxed than their other European counterparts. Hierarchy tends to be vertical and rank matter, but third or fourth level down individuals may be in better standing or have more influence than higher-ups (Export Entreprises S.A., 2018b). The CZ and Spain are members of the European Union (EU). As an EU member state is required to comply with all EU directives and regulations. However, each country has a different legislative framework (Deloitte Touche Tohmatsu Limited, 2017). The state plays a very important role within its business environment. For instance, in the CZ, the family-run business model in not employed to such extent as it is the case on other EU. Countries like Spain or the UK are the typical ones of the EU showing a high level of family business. As to the Czech business environment, however, we may say that its form of business stays often underestimated (Janků, 2017).

Methodology

The objective is to analyse how Spanish firms have integrated MSs, conducting a comparative study of Spanish firms in Spain and Spanish firms in CZ. We have decided to compare Spain and CZ as there are studies that make comparisons between other countries like Spain and UK (Simon & Douglas, 2013) or Spain and Greece (Bernardo et al., 2017) but no research analysing the case between Spain and CZ. An additional aspect to consider is the level of implementation and certification of MSs in each country. UK is one of the countries with more MSs unlike in Greece that has fewer MSs. Therefore, a comparative study can be carried out with CZ, which is one of the countries that is in an intermediate position between both countries. To compare the usage of IMS in two European countries: Spain with more experience in the field of MSs and CZ, where there have been practically no studies on MSs or IMS. For the collection of data, a questionnaire was sent by email to the firms. As a prerequisite, all

participating firms had to have implanted at least two MSs, considering that, if they don’t have two or more MSs, they can't start the integration process and therefore it would not be useful for the study. Firstly, the emails to the firms in Spain were sent to approximately 300 firms, of which 68 valid questionnaires were obtained between September 2016 and January 2017 (Table 1) (Blasco, Pérez, Gisbert, & Palacios, 2017).Secondly, the emails to firms in CZ were sent to approximately 100 firms, of which 15 valid questionnaires were obtained between March and April 2017. Therefore, the questionnaires sent to Czech firms were also sent to the corresponding Spanish firms. The total number of Spanish firms located in CZ is unknown and, therefore, the exact sample for firms in that country cannot be determined. Through Spanish state institutions, there is an approximate number of Spanish firms established in CZ, but the exact amount is not determined. More specifically, in CZ, more than a hundred Spanish firms have been established and they are present in 12 of the 14 Czech regions (Gobierno de España. Ministerio de Asuntos Exteriores y Cooperación, n.d., 2017; Oficina Económica y Comercial / Departamento de Información de Inversiones y Coordinación (ICEX), 2016). Regarding the quantitative study, a descriptive analysis using frequency charts was carried out to analyse the results. SPSS software was used to perform statistical analyses.

Location	Spain
Population size	3.182.321 firms
Sample size	68 firms
Level of confidence	90% (z=1.65; p=0.5; q=0.5)
Sample error	10%
Time period	5 months (September 2016-January 2017)

Table 1.Technical details of the survey of firms in Spain. Source: Own elaboration.

Questionnaire

The questionnaire is based on a literature review and questionnaires used in other thesis have been taken as an example (Abad Puente, 2011; Bernardo Vilamitjana, 2009; Simon i Villar, 2012). Certain points of the questionnaire have been adapted (Blasco et al., 2017; Palacios, Pérez, Gisbert, & Blasco, 2017). The questionnaire was divided in two parts:

Firm information

Name, number of workers and their location.

Integration of systems

Four questions about the integration plan, model used for the design of the integrated system, the people involved and the procedures and, information about the benefits and difficulties because of the integration process.

Regarding the integration plan, it can include the following aspects (AENOR, 2005): Degree of compliance with the requirements of the different management systems implemented and the degree of compliance expected with the integration; Cost and profitability or estimated benefits of integration; Expected impact of integration in the organization; SWOT analysis (summarizes the weaknesses that could lead to threats to the organization and the strengths that may represent opportunities for it); Processes to which integration is applicable; Current organization of the processes and their documentation and the new proposed structure; The composition and hierarchy of new documents, the integrated or specific elements of each system, etc; Resources needed to develop integration at each level; Extraordinary actions to be taken to minimize risks.

Below are the options in relation to the question about the model used for the design of the integrated system: a process map (Map), the "PDCA cycle" for all the processes of the integrated system (PDCA), an analysis of the common elements of the standards (CE), an organization's own model (OM) and UNE 66177 standard (UNE).

Concerning the parties involved and the procedures, the first group of questions, related to the integration of human resources, was focused on knowing whether the responsibility for managing different MSs falls to the same person in each firm (Karapetrovic et al., 2006). This was studied at three levels of responsibility in the organization: top management, MS representatives and inspectors of the different MSs. The second group of questions was aimed at assessing whether the procedures of ISO 9001 were integrated or not (Simon, Karapetrovic, & Casadesus, 2012).

Results

The results of the research are showed in the following section:

Integration plan

There are 18 firms in Spain and 6 firms in CZ that have been eliminated in this section because these firms did not follow an integration plan. The content that appears in the integration plan (Figure 1) is the "degree of compliance" (21.05%) and "processes" (18.42%), for firms in Spain and "resources" (15.79%) for firms in CZ. On the contrary, the contents that have less included firms in its integration plan have been "extraordinary actions" (2.63%) and "SWOT analysis" (4.74%) for firms in Spain; followed by "expected impact of integration in the organization" (5.26%) and "cost and profitability" (5.26%) for firms in CZ.

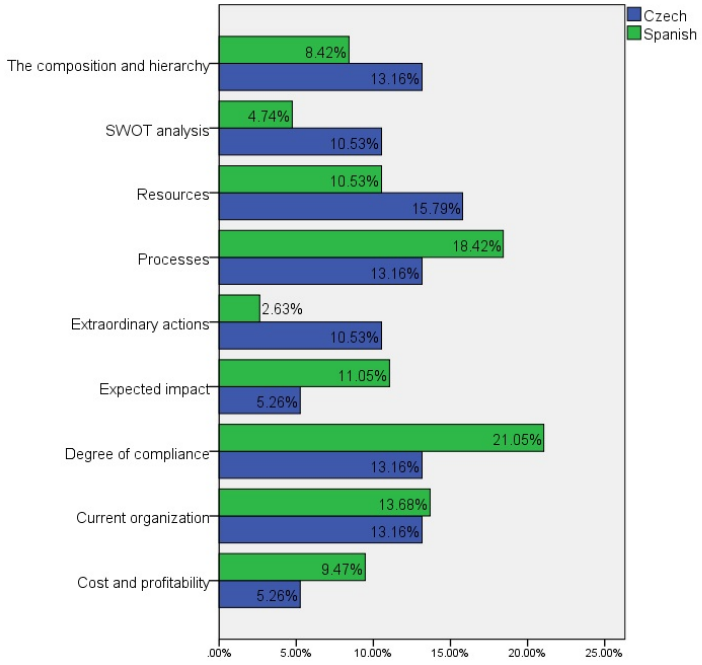

Figure 1. Integration plan. Source: Own elaboration.

Model used for the design of the integrated system

Since firms could choose more than one option, there are 14 possible combinations for firms in Spain and 8 possible combinations for firms in CZ (Figure 2). It should be underlined that one firm in Spain did not make any of the models proposed for the design of the integrated system.

Research highlighted remarkably different model combinations among the firms. The model mostly used by firms in Spain is a process map (31.34%), followed by an analysis of the common elements of the standards (16.42%) and, a combination of the previous two (MAP + CE) (11.94%). The two most commonly used tools correspond to those obtained by Simon, Karapetrovic, & Casadesus (2012). On the contrary, the model mostly used by firms in CZ is a combination of a process map and an analysis of the common elements of the standards (MAP + CE) (26.67%), followed by a process map (MAP) and a combination of a process map, an analysis of the common elements of the standards and a PDCA cycle (MAP + CE + PDCA), with 20% each one. These

results differ from those obtained by Bernardo et al., (2017) , in which the most widely used methodology was the analysis of common elements for all cases studied in Spain and Greece.

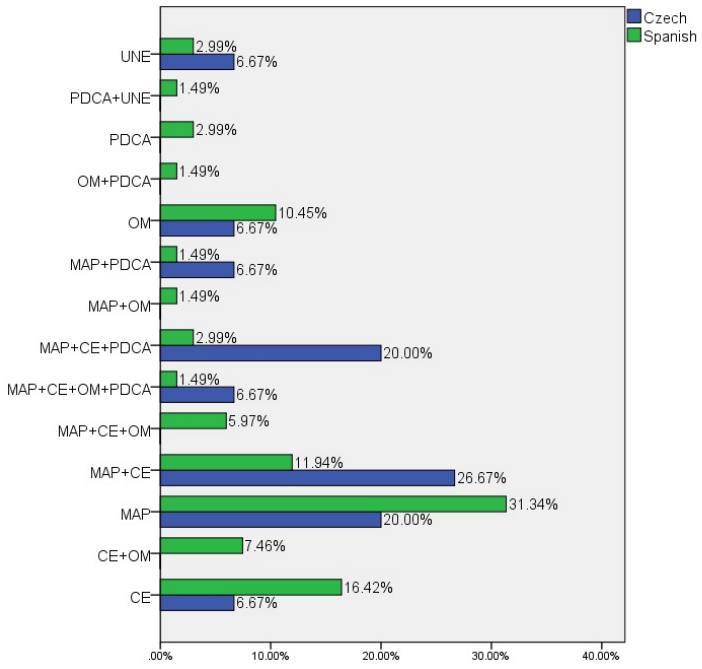

Figure 2. Model used for the design of the integrated system. Source: Own elaboration.

Resources involved in the different MSs

Human resources

In terms of human resources, there were several answers “no response/do not know” for the MS representative (2.94%) and Inspectors/Auditors (4.41%) in firms in Spain. Differences in the integration of human resources can also be observed. MS manager and MS representative are fully integrated in firms in Spain (Figure 3), unlike the firms in CZ that have integrated all the human resources (Figure 4). These results coincide with Simon, Karapetrovic, & Casadesus (2012) due to the level of integration is much higher at the top management level than at the shop floor level. This result is probably explained by the fact that MSs representatives are more trained and committed to manage the IMS, therefore showing a higher level of integration (Zutshi & Sohal,

2005b). On the contrary, these results are different from those obtained by Bernardo et al., (2009).

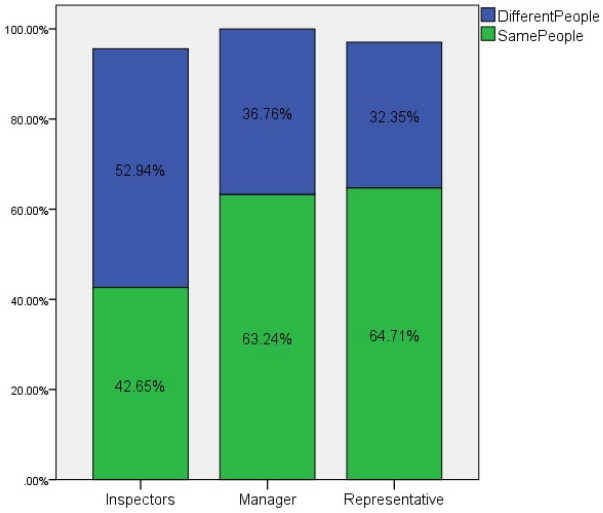

Figure 3. Integration of human resources (Spain). Source: Own elaboration.

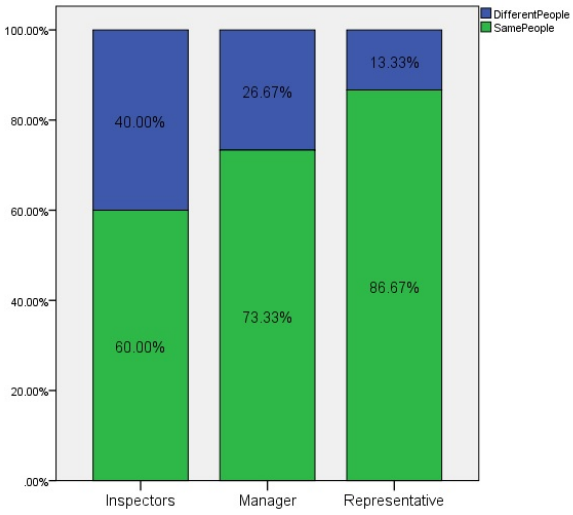

Figure 4. Integration of human resources (CZ). Source: Own elaboration.

Procedures

All the procedures are integrated in the organizations in both countries. If we take into account that all these procedures can be classified under the different requirements of ISO 9001 (Bernardo et al., 2008). The degree of integration of the procedures emphasize that those related to the review of the system and the objectives of quality are

those that have a higher level of integration. Around 91% of the firms agree with this statement along the topics surveyed for firms in Spain (Figure 5). For firms in CZ (Figure 6), the review of the system and the objectives of quality together with the roles, responsibilities and authorities, the non-conformities' control and the internal audits account for 86.67% of the Czech firms. Contrary to this, the context analysis and the risks and chances are the least integrated procedures in both countries. It is easy to see that the more integrated procedures correspond to chapter 5 (leadership) and chapter 9 (performance evaluation). The result does not differ from the study of Bernardo et al., (2008) although in this case, there is greater emphasis on leadership.

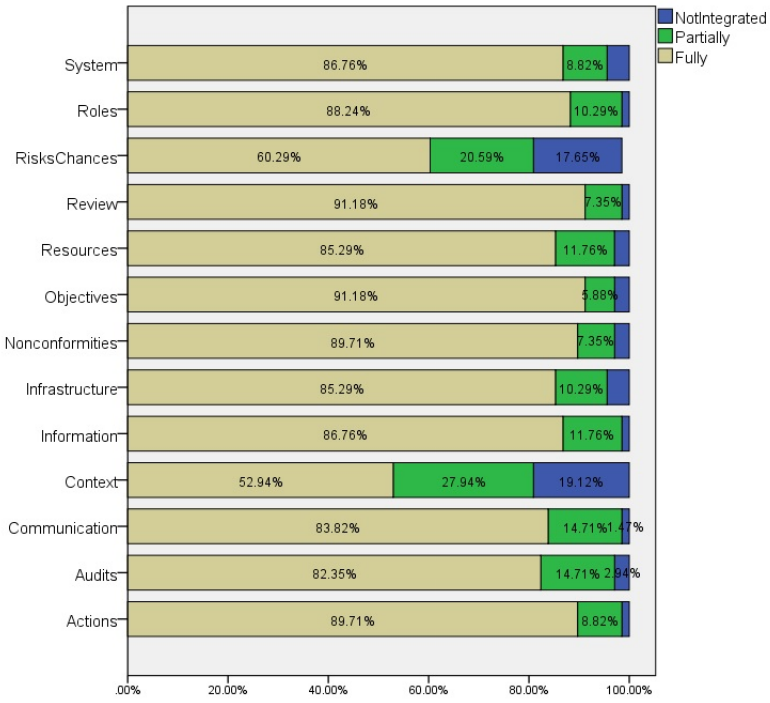

Figure 5. Integration of procedures (Spain). Source: Own elaboration.

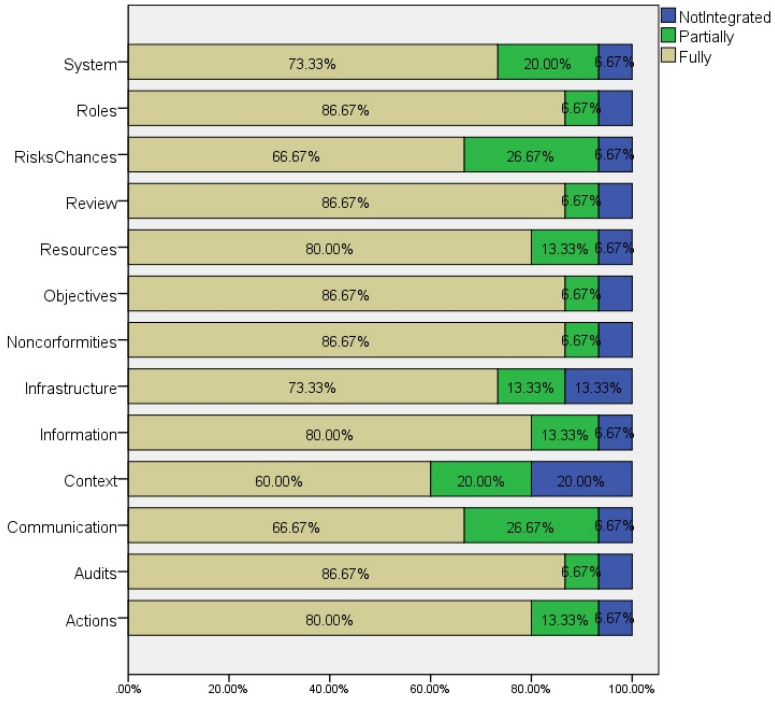

Figure 6. Integration of procedures (CZ). Source: Own elaboration.

Benefits and difficulties of integration

The literature review highlights the potential benefits for organizations from integrating their different MSs into a single system (Zutshi & Sohal, 2005b). Based on the literature review made by Bernardo et al. (2015), about the IMS's benefits, it should be noted that the main advantages detected (Figure 7 and Figure 8) would be those related to firm image improvements (64.71% and 66.67%, respectively), being an external benefit related to the market (Abad, Dalmau, & Vilajosana, 2014; Crowder, 2013; Ferreira Rebelo, Santos, & Silva, 2014; Karapetrovic & Casadesús, 2009; Santos et al., 2011; Simon & Douglas, 2013; Simon, Karapetrovic, & Casadesus, 2012; Simon, Karapetrovic, & Casadesús, 2012; Wagner, 2007); and, the improvement in the quality of the products and/or services (45.59% and 60%, respectively), being an internal benefit related to performance (Abad et al., 2014; De Oliveira, 2013).On the contrary, the least significant benefits are those related to internal benefits. For the firms in Spain

would be better conditions to include new systems (11.76%) (Karapetrovic & Casadesús 2009; Simon et al. 2011; Simon, Karapetrovic & Casadesús 2012a) and employee motivation improvements (11.76%) (Abad et al., 2014); and the improvement of the systems understanding and use (13.33%) (Simon, Karapetrovic & Casadesús 2012a; Simon & Douglas 2013) for firms in CZ.

Attending to the differences between the business and organizational cultures of the two countries, some aspects can be highlighted from Figure 7 and Figure 8. It is interesting to check how the communication point is very important for the Czech companies compared to the Spanish ones. The Czech companies improve in the communication area as they are usually very hierarchic and formal (Export Entreprises S.A., 2018b), considering it very important accounting 53.33% of the total amount, compared to 22.06% for the Spanish companies, as the natural behaviour of the people in Spain includes proximity and familiarity which implies high levels of communication (Export Entreprises S.A., 2018b). On the other side, the stakeholders relationship is not as important for Czech companies – 40% consider it of little importance- as it is for Spanish companies – around 3 out 4 consider it important or very important-, this is due to the way of understanding relationship between business parts in the two countries, as mentioned above.

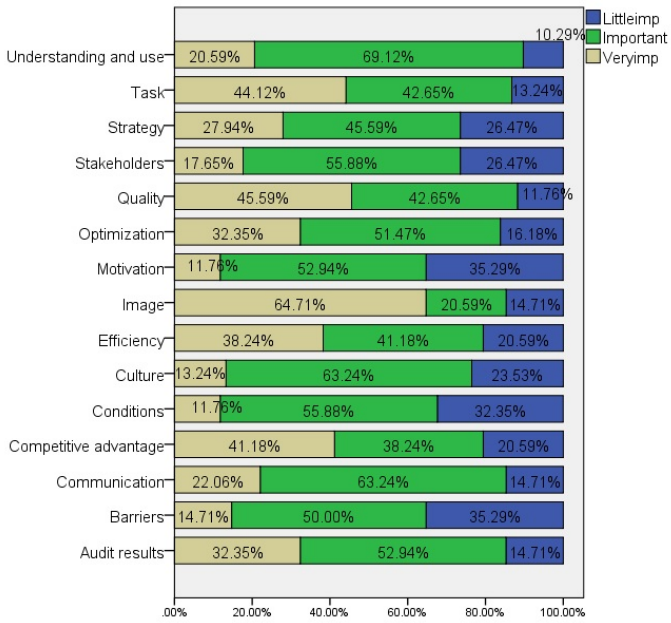

Figure 7. Benefits of integration (Spain). Source: Own elaboration

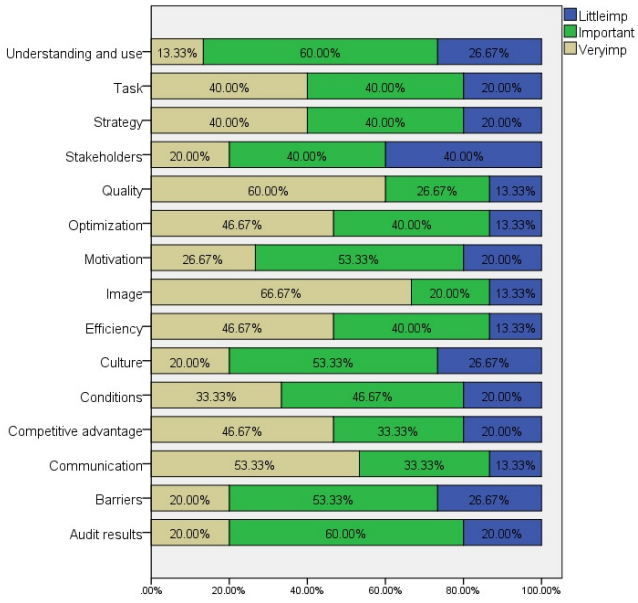

Figure 8. Benefits of integration (CZ). Source: Own elaboration.

In contrast to that, regarding the literature review made by Bernardo et al., (2012a), the lack of human resources (Asif et al., 2009; Karapetrovic et al., 2006; Zutshi & Sohal, 2005b) is one of the main internal difficulties identified in firms in Spain and CZ (25% and 33.33%, respectively) (Figure 9 and Figure 10). On the contrary, the less valued are those related to the external barrier, which is the lack of certifying

organizations support (Salomone, 2008; Zeng et al., 2007) for firms of both countries (2.94% (Spain)) and 6.67% (CZ)).

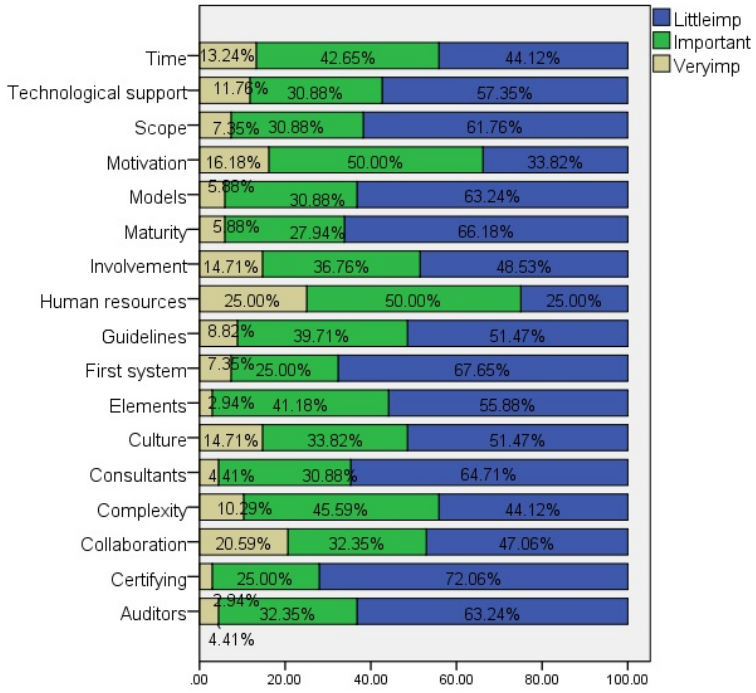

Figure 9. Difficulties of integration (Spain). Source: Own elaboration.

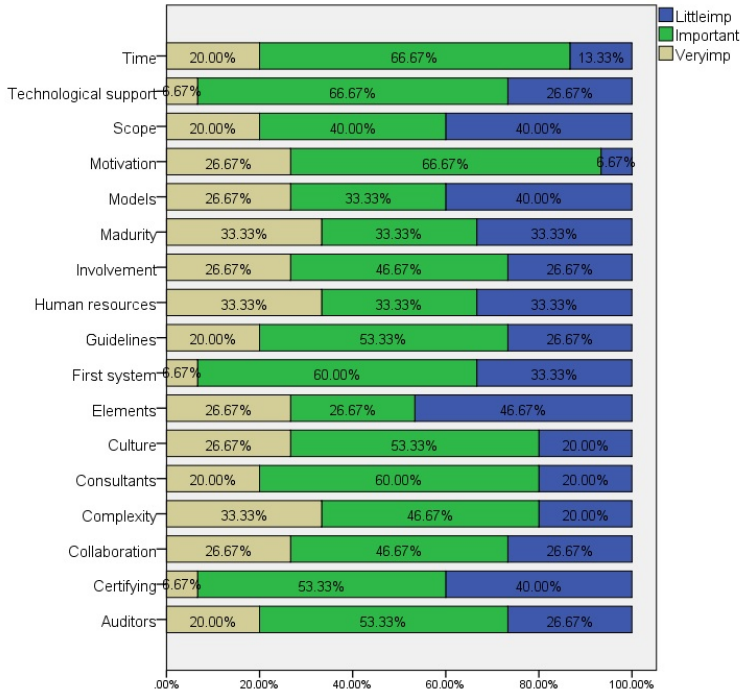

Figure 10. Difficulties of integration (CZ). Source: Own elaboration.

Conclusions

As reflected in numerous studies, organizations implement more than one MS, thus initiating an integration process to unify into a single system the different MSs they have implemented. This paper has analysed how Spanish firms integrate their MSs carrying out a comparison of Spanish firms located in Spain and Spanish firms in CZ, with Spain being one of the countries with more certifications of ISO 9001 and ISO 14001, different from CZ, which has fewer certifications. There are some previous studies about Spanish firms (Bernardo et al., 2008, 2009, 2012a, 2012b; Simon, Karapetrovic, & Casadesus, 2012) or comparative studies of firms placed in Spain with firms located in other countries (Bernardo et al., 2017; Simon & Douglas, 2013) however, this paper studies the existing differences of the integration process between Spanish firms located in different countries (Spain and CZ). The idea when comparing both countries is given by the difference between the number of systems certifications that exist between both countries, since Spain is one of the countries with the highest number of certifications while CZ does not have as many. In addition, when talking about the integration process, it is mainly based on the integration of MSs. MSs have been widely proliferated all over the world, but it should be noted that there are also types of quality improvement methodologies that can benefit firms (Blasco et al., 2017; Palacios et al., 2017).

In relation to the empirical study, it can be stated that a similar integration process is followed in both countries, since, both in Spain and in CZ, those firms that undergo an integration plan include mainly “the degree of compliance” and “resources”; the methodology used to carry out the integration is a Map + CE; the procedures are fully integrated; and, the same benefits and difficulties of the process are highlighted.

The only difference can be seen with the human resources since the inspectors/auditors have only been integrated in firms placed in CZ.

To conclude, it can be asserted that the integration of MSs is not affected by the location of the firm. In this case, they were firms with the same origin located in two different countries, in which the integration process followed is practically identical. This may be because the firms have the same ownership and although they must adapt to a new environment with specific government requirements, when they are subsidiaries in other countries, the values and targets remain the same. In addition, although firms belong to different sectors or carry out different activities in different countries, the same conclusion is still obtained, for example, see (Bernardo et al., 2017; Simon & Douglas, 2013), where the integration process is quite similar.

Also, attending to the commercial relations between both countries, the investment balance is the following: Spain invests in CZ 4,644,855,550€ and CZ invests in Spain 45,150,320€ (DataInvex, 2018). In a broader scope study, this topic will be highlighted since the present study was quite new.

Further, this paper presents some limitations. The sample size and the period of time are the main limitations. The same number of firms in Spain and CZ could not be compared due to this research stay lasting less than 4 months in CZ. That is why only 15 questionnaires were obtained. Besides, the questionnaire was sent in English to the firms in CZ and because of the low collaboration of these, it took more time to get the questionnaire translated into Czech language. Moreover, the results of this research can only be extrapolated to Spanish companies located in other countries.

Finally, future research directions include conducting a similar research with Spanish firms located in Spain with subsidiaries placed in other countries.

References

Abad, J., Dalmau, I., & Vilajosana, J. (2014). Taxonomic proposal for integration levels of management systems based on empirical evidence and derived corporate benefits. *Journal of Cleaner Production*, *78*, 164–173.

Abad Puente, J. (2011). *Implicaciones de la integración de los sistemas de Gestión de Calidad, Medio Ambiente y Seguridad y Salud Laboral basados en estándares internacionales*. Universitat Politècnica de Catalunya.

AENOR. (2005). UNE 66177 Sistemas de gestión. Guía para la integración de los sistemas de gestión. Madrid, Spain: Asociación Española de Normalización y Certificación.

Asif, M., de Bruijn, E. J., Fisscher, O. A. M., Searcy, C., & Steenhuis, H.-J. (2009). Process embedded design of integrated management systems. *International Journal of Quality & Reliability Management*, *26*(3), 261–282.

Asif, M., Fisscher, O. A. M., Joost de Bruijn, E., & Pagell, M. (2010). An examination of strategies employed for the integration of management systems. *The TQM Journal*, *22*(6), 648–669.

Beckmerhagen, I. A., Berg, H. P., Karapetrovic, S. V, & Willborn, W. O. (2003). Integration of management systems: focus on safety in the nuclear industry. *International Journal of Quality & Reliability Management*, *20*(2), 210–228.

Bernardo, M., Casadesus, M., Karapetrovic, S., & Heras, I. (2008). Management systems: integration degrees. Empirical study. In *11th QMOD Conference. Quality Management and Organizational Development Attaining Sustainability From Organizational Excellence to SustainAble Excellence; 20-22 August; 2008 in Helsingborg; Sweden* (pp. 843–859). Linköping University Electronic Press.

Bernardo, M., Casadesus, M., Karapetrovic, S., & Heras, I. (2009). How integrated are environmental, quality and other standardized management systems? An empirical study. *Journal of Cleaner Production*, *17*(8), 742–750.

Bernardo, M., Casadesus, M., Karapetrovic, S., & Heras, I. (2012a). Do integration difficulties influence management system integration levels? *Journal of Cleaner Production*, *21*(1), 23–33.

Bernardo, M., Casadesus, M., Karapetrovic, S., & Heras, I. (2012b). Integration of

standardized management systems: does the implementation order matter? *International Journal of Operations & Production Management*, *32*(3), 291–307.

Bernardo, M., Gianni, M., Gotzamani, K., & Simon, A. (2017). Is there a common pattern to integrate multiple management systems? A comparative analysis between organizations in Greece and Spain. *Journal of Cleaner Production*, *151*, 121–133.

Bernardo, M., Simon, A., Tarí, J. J., & Molina-Azorín, J. F. (2015). Benefits of management systems integration: a literature review. *Journal of Cleaner Production*, *94*, 260–267.

Bernardo Vilamitjana, M. (2009). *Integració de sistemes estandarditzats de gestió: analisi empirica*. Universitat de Girona.

Bernardo Vilamitjana, M., Gotzamani, K., Vouzas, F., & Casadesús Fa, M. (2016). A qualitative study on integrated management systems in a non-leading country in certifications. *Total Quality Management & Business Excellence*, *2016*, *29*(3–4), 453–480.

Blasco, M., Pérez, E., Gisbert, V., & Palacios, M. (2017). Integrated systems and methodologies in Spanish firms. In *DOKBAT 2017 - 13th Annual International Bata Conference for Ph.D. Students and Young Researchers (Vol. 13). Zlín: Tomas Bata University in Zlín, Faculty of Management and Economics. Retrieved from http://dokbat.utb.cz/conference-proceedings/* (pp. 80–89).

Countryeconomy. (n.d.). Country comparison Czech Republic vs Spain. Retrieved 18 June 2018, from https://countryeconomy.com/countries/compare/czech-republic/spain

Crowder, M. (2013). Quality standards: integration within a bereavement environment. *The TQM Journal*, *25*(1), 18–28.

Dahlin, G., & Isaksson, R. (2017). Integrated management systems–interpretations, results, opportunities. *The TQM Journal*, *29*(3), 528–542.

DataInvex. (2018). Estadisticas de inversión. Retrieved 23 November 2018, from http://datainvex.comercio.es/

De Oliveira, O. J. (2013). Guidelines for the integration of certifiable management systems in industrial companies. *Journal of Cleaner Production*, *57*, 124–133.

Deloitte Touche Tohmatsu Limited. (2017). Taxation and Investment in Czech Republic 2017. Retrieved 23 November 2018, from https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Tax/dttl-tax-czechrepublicguide-2017.pdf

Domingues, J. P. T., Sampaio, P., & Arezes, P. M. (2015). Analysis of integrated management systems from various perspectives. *Total Quality Management & Business Excellence*, *26*(11–12), 1311–1334.

Domingues, P., Sampaio, P., & Arezes, P. M. (2017). Management systems integration: survey results. *International Journal of Quality & Reliability Management*, *34*(8), 1252–1294.

Douglas, A., & Glen, D. (2000). Integrated management systems in small and medium enterprises. *Total Quality Management*, *11*(4–6), 686–690.

Export Entreprises S.A. (2018a). Czech Republic: business practices. Retrieved 23 November 2018, from https://en.portal.santandertrade.com/establish-overseas/czech-republic/business-practices?&actualiser_id_banque=oui&id_banque=17&memoriser_choix=memoriser

Export Entreprises S.A. (2018b). Spain: business practices. Retrieved 23 November 2018, from https://en.portal.santandertrade.com/establish-overseas/spain/business-practices

Ferreira Rebelo, M., Santos, G., & Silva, R. (2014). A generic model for integration of Quality, Environment and Safety Management Systems. *The TQM Journal, 26*(2), 143–159.

Fresner, J., & Engelhardt, G. (2004). Experiences with integrated management systems for two small companies in Austria. *Journal of Cleaner Production, 12*(6), 623–631.

Gianni, M., & Gotzamani, K. (2015). Management systems integration: lessons from an abandonment case. *Journal of Cleaner Production*, *86*, 265–276.

Gobierno de España. Ministerio de Asuntos Exteriores y Cooperación. (n.d.). Spanish companies in the Czech Republic. Retrieved 2 February 2017, from http://www.exteriores.gob.es/Embajadas/PRAGA/es/Noticias/Documents/Spanish

Companies.pdf

Gobierno de España. Ministerio de Asuntos Exteriores y Cooperación. (2017). Ficha país. República Checa. Retrieved 28 April 2018, from http://www.exteriores.gob.es/Documents/FichasPais/REPUBLICACHECA_FICHA PAIS.pdf

Griffith, A., & Bhutto, K. (2009). Better environmental performance: a framework for integrated management systems (IMS). *Management of Environmental Quality: An International Journal*, *20*(5), 566–580.

ISO. (2008). *The Integrated Use of Management System Standards*. Geneva, Switzerland: International Organization for Standardization.

ISO. (2018a). ISO Survey 2017. Retrieved 7 March 2018, from https://isotc.iso.org/livelink/livelink?func=ll&objId=18808772&objAction=browse&viewType=1

ISO. (2018b). The ISO Survey Of Management System Standard Certifications 2017. Retrieved 7 March 2018, from https://www.iso.org/the-iso-survey.html

Ivanova, A., Gray, J., & Sinha, K. (2014). Towards a unifying theory of management standard implementation: the case of ISO 9001/ISO 14001. *International Journal of Operations & Production Management*, *34*(10), 1269–1306.

Janků, M. (2017). Legal and Economic Context of the Czech Civil Code Rules on Family Enterprises. *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis*, *65*(6), 1945–1951.

Karapetrovic, S. (2005). IMS in the M (E) SS with CSCS. *Total Quality Management and Excellence–Menadzment Totalnim Kvalitetom i Izvrsnost*, *33*(3), 19–25.

Karapetrovic, S., & Casadesús, M. (2009). Implementing environmental with other standardized management systems: Scope, sequence, time and integration. *Journal of Cleaner Production*, *17*(5), 533–540.

Karapetrovic, S., Casadesús, M., & Heras, I. (2006). Dynamics and integration of standardized management systems. *Documenta Universitaria, Girona, Spain*.

Karapetrovic, S., & Jonker, J. (2003). Integration of standardized management systems: searching for a recipe and ingredients. *Total Quality Management & Business*

Excellence, *14*(4), 451–459.

Karapetrovic, S., & Willborn, W. (1998). Integration of quality and environmental management systems. *The TQM Magazine*, *10*(3), 204–213.

Kim, Y. H., Sting, F. J., & Loch, C. H. (2014). Top-down, bottom-up, or both? Toward an integrative perspective on operations strategy formation. *Journal of Operations Management*, *32*(7), 462–474.

Klute-Wenig, S., & Refflinghaus, R. (2015). Integrating sustainability aspects into an integrated management system. *The TQM Journal*, *27*(3), 303–315.

Labodová, A. (2004). Implementing integrated management systems using a risk analysis based approach. *Journal of Cleaner Production*, *12*(6), 571–580.

Llonch, M., Bernardo, M., & Presas, P. (2018). A case study of a simultaneous integration in an SME: implementation process and cost analysis. *International Journal of Quality & Reliability Management*, *35*(2), 319–334.

Mazur, J., & Zaborek, P. (2016). Organizational culture and open innovation performance in small and medium-sized enterprises (SMEs) in Poland. *International Journal of Management and Economics*, *51*(1), 104–138.

Muzaimi, H., Chew, B. C., & Hamid, S. R. (2017). Integrated management system: The integration of ISO 9001, ISO 14001, OHSAS 18001 and ISO 31000. In *AIP Conference Proceedings* (Vol. 1818, p. 20034).

Oficina Económica y Comercial / Departamento de Información de Inversiones y Coordinación (ICEX). (2016). Directorio de empresas españolas establecidas en República Checa. Retrieved 20 February 2017, from https://www.icex.es/icex/es/navegacion-principal/implantacion-e-inversion-exterior/informacion-para-invertir-en-el-exterior/empresas-espanolas-establecidas-en-el-exterior/4687939.html

Pal Pandi, A., Rajendra Sethupathi, P. V, & Jeyathilagar, D. (2016). The IEQMS model for augmenting quality in engineering institutions–an interpretive structural modelling approach. *Total Quality Management & Business Excellence*, *27*(3–4), 292–308.

Palacios, M., Pérez, E., Gisbert, V., & Blasco, M. (2017). How the management systems have been implemented in Spain. In *DOKBAT 2017 - 13th Annual*

International Bata Conference for Ph.D. Students and Young Researchers (Vol. 13). Zlín: Tomas Bata University in Zlín, Faculty of Management and Economics. Retrieved from http://dokbat.utb.cz/conferenceproceedings/ (pp. 113–126).

Poltronieri, C. F., Gerolamo, M. C., Dias, T. C. M., & Carpinetti, L. C. R. (2018). Instrument for evaluating IMS and sustainable performance. *International Journal of Quality & Reliability Management*, *35*(2), 373–386.

Salomone, R. (2008). Integrated management systems: experiences in Italian organizations. *Journal of Cleaner Production*, *16*(16), 1786–1806.

Santos, G., Mendes, F., & Barbosa, J. (2011). Certification and integration of management systems: the experience of Portuguese small and medium enterprises. *Journal of Cleaner Production*, *19*(17), 1965–1974.

Simon, A., Bernardo, M., Karapetrovic, S., & Casadesus, M. (2013). Implementing integrated management systems in chemical firms. *Total Quality Management & Business Excellence*, *24*(3–4), 294–309.

Simon, A., Bernardo, M., Karapetrovic, S., & Casadesús, M. (2011). Integration of standardized environmental and quality management systems audits. *Journal of Cleaner Production*, *19*(17), 2057–2065.

Simon, A., & Douglas, A. (2013). Integrating management systems: does the location matter? *International Journal of Quality & Reliability Management*, *30*(6), 675–689.

Simon, A., Karapetrovic, S., & Casadesus, M. (2012). Evolution of integrated management systems in Spanish firms. *Journal of Cleaner Production*, *23*(1), 8–19.

Simon, A., Karapetrovic, S., & Casadesús, M. (2012). Difficulties and benefits of integrated management systems. *Industrial Management & Data Systems*, *112*(5), 828–846.

Simon i Villar, A. (2012). An empirical analysis of integrated management systems.

Wagner, M. (2007). Integration of environmental management with other managerial functions of the firm: empirical effects on drivers of economic performance. *Long Range Planning*, *40*(6), 611–628.

Wilkinson, G., & Dale, B. G. (1999a). Integrated management systems: an examination of the concept and theory. *The TQM Magazine*, *11*(2), 95–104.

Wilkinson, G., & Dale, B. G. (1999b). Integration of quality, environmental and health and safety management systems: an examination of the key issues. *Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture*, *213*(3), 275–283.

Zeng, S. X., Shi, J. J., & Lou, G. X. (2007). A synergetic model for implementing an integrated management system: an empirical study in China. *Journal of Cleaner Production*, *15*(18), 1760–1767.

Zeng, S. X., Xie, X. M., Tam, C. M., & Shen, L. Y. (2011). An empirical examination of benefits from implementing integrated management systems (IMS). *Total Quality Management*, *22*(2), 173–186.

Zutshi, A., & Sohal, A. S. (2005a). A framework for environmental management system adoption and maintenance: an Australian perspective. *Management of Environmental Quality: An International Journal*, *16*(5), 464–475.

Zutshi, A., & Sohal, A. S. (2005b). Integrated management system: the experiences of three Australian organisations. *Journal of Manufacturing Technology Management*, *16*(2), 211–232.