

THE NORMALIZATION OF MANAGEMENT SYSTEMS IN POLAND – RESEARCH RESULTS

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Abstract: The aim of the paper is analysis of dissemination of management systems in Poland, and to discover if there any difference between management systems dissemination and size of enterprise. On the basis of conducted research, the most widespread management system in the surveyed organizations, besides ISO 9001, was ISO 14001. Moreover, many organizations use IATF 16949, PN 18001, AQUAP, ISO 22000, EMAS, ISO 27001 management systems.

Keywords: quality management systems, management systems, industrial management systems, ISO 9001:2015, ISO 14001:2015, 18001, IATF 16949.

1. Introduction

Quality management systems have been adapted in Poland and around the world since the 1980s of the twentieth century. Initially, the ISO 9001 system (and its derivatives) was applied (Cholewicka-Goździk, 2016; Gębczyńska, and Wolniak, 2018). However, around 2008-2018, the growth dynamics of the number of companies with implemented quality management systems that were in line with the requirements of ISO 9001 began to decline. Currently, in most developed countries, one can even talk about stagnation when it comes to a system compliant with the requirements of ISO 9001. At the same time, other industrial management systems have become a more popular choice (Juszczak-Wiśniewska, and Ligarski, 2015; Ligarski, 2014; Natarajan, 2017; Tari, and Azorin, 2010).

The quality management model based on the requirements of ISO 9001 has been modified four times up till now (Żemigła, 2017; Wolniak, 2011). The last amendment was made in 2015. At the same time, many industry standards and guidelines regarding selected aspects of the implementation and functioning of quality management systems were created (Simon et, al., 2017; Salomone, 2008). The data collected by the International Organization for Standardization (ISO – International Organization for Standardization) also suggests that from

year to year, the number of organizations that have a certificate of compliance with the requirements of the standard is growing in most countries (Sułkowski, and Wolniak, 2018; Łuczak, and Wolniak, 2016).

We can distinguish the following motives for putting into place quality management systems within business entities (Wolniak, and Sułkowski, 2015; Wolniak, and Sułkowski, 2016; Wolniak, 2013):

- Ensuring repeatability of the product against the developed specification.
- Improving communication in relation to customer requirements and transforming this into a product/service.
- Eliminating waste by standardizing procedures (including reducing costs of poor quality).
- Implementing data analysis for making rational decisions.
- Meeting the requirements of the market regulator, e.g. in the area of conformity assessment procedures.
- Demonstrating that the requirements of the recipient in relation to the Quality Management System are met.
- Qualifying suppliers.
- Increasing the quality of services provided and developing the product/service.
- Visualizing own organization through credibility by an external, recognized on the market unit, in particular towards foreign contractors, in which breaking the stereotype of the image of developing countries is particularly difficult.
- Disseminating good management practice to the environment.

The themes of quality management system implementation are often divided into three groups:

- Forced by the environment.
- Ambition.
- Awareness of the improvement of the organization's functioning.

Currently in most organizations, external motives for the implementation of certified Quality Management Systems compliant with the requirements of ISO 9001 mostly predominate. This situation is negative from the point of view of the long-term effectiveness of the Organization's Quality Management Systems (Pacana et al., 2017; Pacana, and Stadnicka, 2017). Indeed, from the research conducted in the world, it appears that the advantage of internal motives in the implementation of the system is positively correlated with its subsequent effectiveness (Łagowski, and Żuchowski, 2016; Novakova et al., 2016; Pokosińska et al., 2002; Wolniak, 2013, 2014, 2017).

In order to unify the structure of issued norms, which is particularly necessary due to the ever more frequent integration of individual normative solutions into one integrated management system, a so-called 'SL annex' was created, imposing a uniform structure of

standards for management systems created by the ISO organization (Draft, 2011). The annex SL presents a new concept of creating standards in the area of management systems called 'High level structure' HLS. This is built upon two basic assumptions (Rączka, 2017):

- unification of the structure of all standards for management systems,
- identical basic text, terminology and basic definitions being used in all management system standards.

The aim of the new concept is to increase the consistency and compatibility of various management system standards. The HLS concept predicts that in the future all new management system standards will have the same overall structure. Currently, new editions of ISO 9001 and ISO 14001 standards from 2015 have been developed in accordance with the SL annex.

From year to year, we can observe China's significant and growing share in the certification structure in the world. It should be assumed that in both China and India, certification is not so much an expression of pro-quality orientation, but a way to build confidence in the quality of the product in the eyes of first world based businesses. This, they consider the starting point for cooperation. Nevertheless, one should notice the progressive process of "maturing" of those markets on which the growing domestic demand determines that they cease to be only the production base of highly developed countries.

The aim of the paper is an analysis of dissemination of management systems in Poland. We intend to discover differences between this and size of enterprise.

2. Research results

The research was done in 2017. Drawing upon a list of business entities, we sent a prepared survey to their quality managers or managers of integrated management systems by e-mail as a link to a portal and as an attachment (file with a questionnaire). The questionnaire was active on the Internet on the portal for three months. As a result of the research, 592 questionnaires were obtained.

Table 1 presents the list of the most important certified management systems that govern the surveyed organizations, as well as the percentage of organizations surveyed in the case of which there are specific certificates. The table lists the most frequent certificates held and it includes those systems where 20 or more surveyed organizations have a certified system. This group includes the following systems (in the order of decreasing number of certificates):

- PN-EN ISO 9001. Quality management systems – Required.
- PN-EN ISO 14001. Environmental management systems – Required with guidance for use.
- ISO/TS 16949 Quality management systems – Particular requirements necessitated for the application of ISO 9001:2008 for automotive production and relevant service part

organizations/IATF 16949 Quality management system requirements for automotive production and relevant service parts organizations.

- PN-EN ISO/IEC 27000. Information technology – Security techniques – Information security management systems – Overview and vocabulary.
- PN 18001. Occupational health and safety management systems – Required.
- AQAP. NATO Quality Assurance Requirements For Design, Development And Production.
- EMAS. Eco-Management and Audit Scheme.
- PN-EN ISO 22000. Food safety management systems – required for any organization in the food chain.

After ISO 9001 (a basic quality management system), ISO 14001 is the second most used standard management system. This is confirmed by the results of other researchers (Pacana, 2014; Pacana, et al., 2014, 2017; Ejdys and Kobylińska, 2012; Wysokińska-Senkus, and Wyrębek, 2011), who also stated that in Poland, ISO 14001 is in second place in terms of prevalence. The results of empirical research have also confirmed the dissemination of specific standards in the automotive industry in Poland (160 organizations follow TS 16949/IATF 16949 systems).

Apart from the aforementioned, the following certificates were followed:

- OHSAS 18001. Occupational health and safety management systems – Specification – 17 times.
- PN-EN ISO 50001. Energy management systems – Requirements and recommendations for use – 12 times.
- SQMS – McDonalds Supplier Quality Management System – 3 times.

Table 1.

Dissemination of standards in the surveyed organizations

Certificate	Number of entities	Percentage[%]
ISO 9001	573	100%
ISO 14001	204	36%
TS 16949 / IATF 16949	160	28%
PN 18001	59	10%
AQAP	59	10%
ISO 22000	25	4%
EMAS	50	9%
ISO 27001	94	16%

Source. Author own work.

The dissemination of the analyzed norms depends on the size of the organization. The use of Kruskal Wallis's nonparametric ANOVA test at the statistical significance level $\alpha = 0.01$ made it possible to find statistically significant differences between the dissemination of all discussed certified management systems and the size of the organization.

Table 2 presents the results regarding the dissemination of quality management system certificates as compared with the size of the organization. The analysis did not take into account the ISO 9001 standards, as all of the surveyed organizations have a certified quality management system compatible with this system. Data in the table are presented in percentage terms – how many percent of a given type of organization has implemented a specific management system.

The analysis of collected results uncovers the fact that the majority of certified management systems are found in large organizations. It is mainly these companies, for example, that have implemented standards for environmental management ISO 14001, or standards for quality management systems in the automotive industry TS 16949/IATF 16949. Of note, medium-sized organizations followed established standards least often.

Table 2.

Dissemination of standards as compared with the size of the organization

Certificate	Big organizations (N = 451)	Medium organizations (N = 70)	Small organizations (N = 52)
ISO 14001	43%	0%	17%
TS 16949 / IATF 16949	35%	0%	0%
PN 18001	11%	0%	17%
AQAP	11%	0%	17%
ISO 22000	6%	0%	0%
EMAS	11%	0%	0%
ISO 27001	13%	13%	48%

Source. Author own work.

In the case of small organizations, it is also possible to observe that certified management systems have been put in place, however, their type is clearly different than that in the case of large enterprises. In small organizations, information security management systems ISO 27001 are followed.

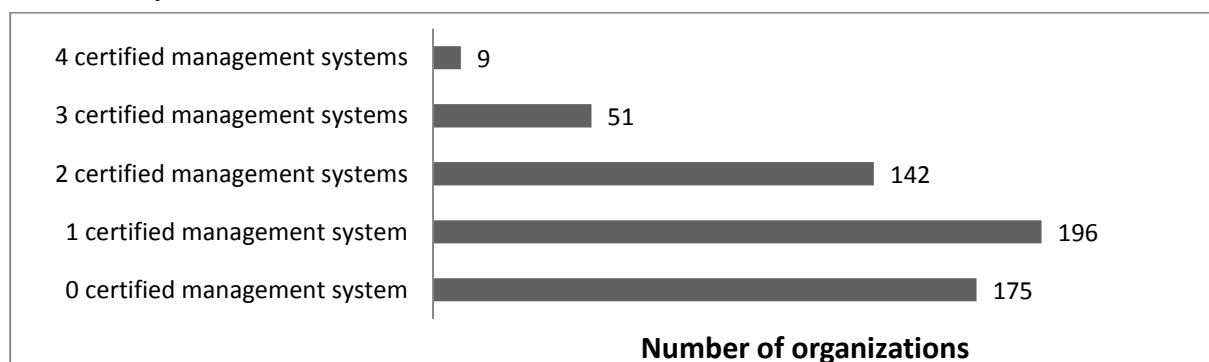
Subsequently, the relationship between the dissemination of standards for formalized management systems and the basic profile of the organization's activity (industry, services, commerce) was examined. In this case, statistically significant differences between particular groups, according to the non-parametric Kruskal-Wallis ANOVA test at the statistical significance level $\alpha = 0.01$, occur in the case of four variables. These are the following systems: ISO 14001, TS 16949 / IATF 16949 and EMAS. The results of dissemination of certified management systems from the point of view of the dominant business profile are presented in Table 3. These are presented as a percentage of organizations from a given group having a specific system implemented.

Table 3.*Dissemination of standards as compared to the dominant organization profile*

Certificate	Industry (N = 443)	Commerce (N = 35)	Services (N = 95)
ISO 14001	38%	0%	37%
TS 16949 / IATF 16949	30%	0%	27%
PN 18001	11%	0%	9%
AQAP	11%	0%	9%
ISO 22000	6%	0%	0%
EMAS	11%	0%	0%
ISO 27001	16%	0%	26%

Source. Author own work.

Based on the collected data, it can be stated that certified management systems are found predominantly in manufacturing industry, and several certified management systems are used in such organizations, e.g. environmental management systems ISO 14001 and automotive industry quality management systems TS 16949/IATF 16949. In the surveyed commerce organizations, no enterprises were found that had other management systems than the basic ISO 9001 system.

**Figure 1.** The number of certified management systems followed (other than ISO 9001).

Source: author own work.

In the case of service organizations, such organizations implement more often information security systems ISO 27001. This can be explained in that quite often these are small, service organizations from the Hi-Tech industry that sell their products and provide services on the global market. In addition, many service organizations, as in the manufacturing industries, follow environmental management systems ISO 14001 and automotive industry TS 16949/IATF 16949.

A useful indicator that is worth developing is the index expressing the number of certified management systems in place in a given organization (outside the ISO 9001 system). Figure 1 shows the number of organizations for which the index of certified management systems (WCSZ) assumes a specific value. The figure shows that the majority of the surveyed organizations follow, besides ISO 9001, yet another certified management system. Herein, 175 entities organizations only follow ISO 9001, a significant number of organizations have in place 2 certified management systems, 51 businesses have implemented 3 systems and

9 establishments have in place 4 systems. There were no cases in which the organization had more than four certified management systems.

3. Conclusion

On the base of the conducted research, we can say that the most widespread management system in the surveyed organizations besides ISO 9001 was ISO 14001. In Poland, many organizations, however, also utilize IATF 16949, PN 18001, AQUAP, ISO 22000, EMAS and ISO 27001. Furthermore, we can observe entities that have put in place an increasing amount of industry management systems specific to particular types of business. We also can see differences between widespread use of those systems and the size of organization and the type of activity the enterprise was engaged in. In addition, industry-related systems are used more often in big organizations. One exception is ISO 27001, which is more often followed in small organizations – usually engaged in Hi-tech. From profile of organization point of view, the researched systems are most often used in the manufacturing industry, rarely in the service industry and not in the commerce industry.

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