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MACRO FACTORS INFLUENCING THE FORMATION OF STANDARDIZED MANAGEMENT SYSTEMS OF AN ENTERPRISE

Abstract. This article is devoted to the environmental factors, influencing the implementation of standardized management systems of the enterprise at the country level. The problem is considered from the perspective of systems theory and complexity theory.

The research focuses on management systems created following ISO 9001 and ISO 14001 standards and their relationship with the external environment. The study involved 20 European countries with different levels of economic and innovative development.

The formation and subsequent development of standardized management systems (SMSs) require considering environmental factors, the context of the enterprise, which is reflected in the provisions of standards for management systems. However, the issues of the influence of environmental factors on the decision of enterprises to implement standardized management systems have been insufficiently studied.

The work contains three hypotheses: a) about the connection between environmental factors and the introduction of SMSs by enterprises; b) about the diversity and uniqueness of the configurations of environmental factors affecting the spread of the SMSs in different countries; c) regarding the presence of similar structures of environmental factors influencing the spread of the SMSs in separate countries, which would make it possible to identify the basic types of such configurations.

The study resulted in confirmation that a connection between environmental factors on the implementation of the SMSs exists, and groups of aggregated factors along with their components were identified. The features of the configurations of factors influencing the SMSs in different countries were considered. A distinctive type of influence of the external environment on the SMSs board, common for several European countries, was revealed, and called as 'denying'.

Correlation analysis was used to determine the relationship between the factorial and the resulting characteristics, the results of which were subjected to qualitative discussion.

Further research in this direction should cover a larger number of countries and factors influencing the formation of the SMSs. This will allow identifying a greater number of basic types of external environment influence on the formation of SMSs for enterprises in different countries and regions.

Keywords: standardized management systems (SMSs), environment, macro factors, ISO 9001, ISO 14001

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JEL Classification: E66, L15, O44, O52

Introduction. The creation and subsequent development of such systems should take place dependent upon the context of an organization as follows from corresponding standards. However, little attention has been paid insofar to the clarification of the impact of the organizational context on the implementation of standardized management systems.

As open systems, enterprises should maintain the conformity between internal processes, including managerial ones, and changing external conditions. Due to a significant complication of the factors of the environment, the degree of complexity of internal processes increases, which may eventually lead to the making of erroneous judgements about organizational changes, reconfigurations, transformations, and, among others – issues related to standardization and development of management systems. The problem grows more acute as in the practice of management prospect results of organizational moves are rarely assessed in terms of complexity. Hence, knowledge of external factors, which incite the introduction of standardized management systems at the enterprise-level is to allow managers to get more balanced, timely, and impartial approach to decisions in this area and ensure the sustainable development of the enterprise.

This paper examines the relationship between decisions on the implementation of the most common standardized management systems (SMSs) certified with ISO 9001, ISO 14001, ISO/IEC 27001, and ISO 50001 against environmental factors at the level of several European countries.

Literature review and the problem statement. Standardized management systems emerge as a response to the increasing complexity of environmental factors [Cawsey, Deszca, Ingols, 2012; Castillo-Martinez, Medina-Merodio, Gutierrez-Martinez, Fernández-Sanz, 2021; Dźwigoł, Shcherbak, Semikina, Vinichenko, Vasiuta 2019; Kotter, 1996; Nadler, Tushman, 1980] and extending degree of complexity of the enterprise management system (differentiation). Emerging is followed by a lengthy integration process that decreases the complexity of the system [Gorlova, 2020b]. Anyway, an integrated management system should have the degree of complexity corresponding to the degree of the external environment, and change following changes in it.

Since the beginning of this century, formation of SMSs are increasingly viewed in the context of their integration. Integration aspects are mainly examined at the micro level, within an enterprise [Bernardo, A. Tarí, J. J. Molina-Azorín, J. F., 2015; Dahlin & Isaksson, 2017; Maier, Vadastreanu, Keppler, Eidenmuller, & Maier, 2015; Odigie M., Badar, Sinn J., Moayed, & Shahhosseini, 2017; Olivera Matias & Coelho, 2011; Siva et al., 2016; Trierweiller, 2016]. Many researchers point out at difference in conditions under which enterprises function in different countries. In their opinion, this difference causes a substantial variety in how different elements of SMSs is managed in different countries [Jørgensen, Remmen, & Mellado, 2006]. Note that obtained results prove the similarity of positive results and problems faced by enterprises of various European countries through SMSs formation and development [Bernardo, Gianni, Gotzamani, Simon 2017].

SMSs integration connects the process of management system differentiation within the cycle of organizational development – that is not studied under systemic approach. Introduction or reorganization of existing SMSs prompts the differentiation, loading the

control system with new subsystems, which further increases a degree of management complexity [Czyżewski, Matuszczak, Miśkiewicz 2019; Dzwigol, Dzwigol–Barosz, Kwilinski 2020]. Consequently, the question arises how to align increasing complexity of management system with its ability to meet the challenges of the environment while preserving holism, that is what is the limit of the effectiveness. This makes the study of the environmental factors impact to the choice to adopt, implement and develop SMSs particularly important.

Hence follows the hypothesis that there exists a relation between environmental factors and the implementation of standardized management systems in enterprises.

Consequently, the first task of the study is the determination of environmental factors, whose influence on the formation of the SMSs is to be studied further.

The very concept of the external environment of an enterprise appeared in the narrative of organizational science in the late 1950s - early 1960s as a result of the development of systems theory [Hatch, 2002]. Since then, several concepts further explaining the relationship between an organization and its environment have emerged, however many means, as the definition of the environment through its elements, formulated in the early stages are still in use today. Thus, the external environment of an enterprise consists of three levels: micro, macro, and mega. At the micro-level, the factors of the inter-organizational logistics network (customers, suppliers, partners, controlling organizations, etc.) function. At the macro level act such groups of factors as political and legal, socio-economic, socio-cultural, technological, environmental. The mega-level embodies elements, which operate global influences. This study examines the macro factors acting within individual countries, which affect all enterprises within it, regardless of configurations of the supply networks they form and their role in them.

Quality management and environmental management systems are the most widespread in Europe and worldwide [Dzwigol 2020; Kwilinski, Vyshnevskyi, Dzwigol 2020]. These systems primarily make it possible to consider the interaction of environmental factors with standards. The effects of quality and environmental protection issues are foremost associated with environmental socio-cultural factors. This group of factors also encompasses concepts such as leadership, rationality, material well-being, the importance of human rights, and hierarchical status, etc. The history of the development of quality management systems shows that they were formed and developed essentially at leading enterprises (for example, at Ford and Toyota), leading industries (for example, automotive) and leading countries (USA, Japan, UK) [Drozdz, Miskiewicz, Pokrzywniak, Elzanowski 2019; Dzwigol, Dzwigol-Barosz, Miskiewicz, Kwilinski 2020; Miśkiewicz, Wolniak 2020]. Leadership manifests itself in a competitive environment, which links quality with the concepts of competition and competitiveness. The competitiveness of an enterprise, in turn, ensures its financial well-being and the interests of its various stakeholders. In this context, the concept of Total quality management (TQM) emerges. In management theory, TQM arises as a tool to improve the competitiveness of an enterprise. Accordingly, the SMSs, based on the principles and methods of TQM, should be considered as a tool for increasing the competitiveness of an enterprise. Assuming that the competitiveness of an organization is connected to that of the country, it is supposed to exist relations between the number of implemented SMSs, and competitiveness of the country.

In developed countries, there has been a tendency to reduce the value of hierarchical status, which takes the form of flat management structures of enterprises with a higher

degree of delegation of authority since the end of the last century. Earlier, we substantiated the vital importance of delegating for the effective integration of the SMSs into the general management system of the enterprise [Gorlova, 2020a, 2020b]. Thus, the readiness of management to delegate plays a crucial role in the successful implementation of SMSs by enterprises and therefore works as a factor stimulating the implementation of ISO standards for management systems (MSs).

Corruption appears as one of the significant environmental factors influencing the management of organizations. It directly affects the political, legal and socio-economic factors of the external environment and indirectly - all those, where the interaction of people exists. It is difficult to make an unambiguous assumption about the impact of corruption on the expansion of SMSs in business. On the one hand, the implementation of SMSs can be viewed by enterprise management as an anti-corruption tool that reduces the influence of corruption within the company. However, a diminishing level of corruption in the external environment, in our opinion, may cause increasing the efficiency of the implementation of SMSs. Thus, a decrease in corruption level in society is likely to lead to more intensive development of SMSs by enterprises.

Among the socio-cultural factors affecting the development of quality and environmental management institutions such as the educational system and traditional professions play an essential role. In terms of quality and environment management, the influence of individual values formed in the process of socialization, including under the influence of religion drow special attention. That comes into the light when comparing the Japanese, American or European schools of quality management. As this study is focused exclusively on European countries in which a homogenization of individual values is gathering momentum, issues of socialization, dominant values and religion are not included.

For some of the leading European countries, trade is a traditional field of activity, which forms the basis for economic development. In these countries, it is supposed to find the impact of trade on quality and environmental management; the impact may take the form of ability of enterprises to meet any requirements of consumers, both in domestic and foreign markets.

The high level of consumer demands is resulting from an accustomed level of consumer experience and education. Leading enterprises not only meet the high demands of consumers, but they are also able to create demand, lead the consumer ahead, thereby increasing the level and quality of his experience. For this, the management of an enterprise must have an advanced level of knowledge and competencies. Therefore, we believe that the level of education of managers plays a more significant role in the development of quality and environmental management than the education and sophistication of customers.

The development of education at the macro level is closely related to the development of science. Such a relationship illustrates the interaction of social and technological factors of the external. At present, innovative types of products that require constant efforts from enterprises to maintain their competitiveness meet the highest demands. Accordingly, the following technological factors as the level of development of science, the international prominence of scientific institutions, the level and pace of innovative development of the economy, as well as the share of high-tech products and services in exports of the external environment may play the role influencing the spread and development of

quality and environmental management. Science and technology development also impacts the decision of enterprises to implement standardized information security and energy management systems.

The innovative track of a country economic development presumably connects to the development of the institution of intellectual property protection. From our point of view, this factor stimulates the activity within an enterprise on improving quality and protecting the environment.

Economic factors are closely related to all other groups of environmental factors, mentioned above. Thus, among the technological factors, the export of high-tech products was singled out. Among other economic factors affecting the spread of SMSs, the following seem to be also important: share of national producers in the domestic market, the productivity of labour, especially in relationship with technical and social factors, the ratio of the growth rates of labour productivity and wages. The productivity of labour and the ratio of its growth rates to the growth of wages characterize the degree of development of business processes within the organization. We assume that the higher the degree of development of business processes, the less the enterprise needs to implement SMSs. However, in this situation, the strength of government control of business matters. If the pressure of government regulation on business is high, then, in our opinion, the implementation of SMSs enterprises is more likely.

It is also possible to assume that the decision to implement SMSs is under the influence of the institution and practice of standards application existed in the country. That is, with the presence of the developed culture of standardization of processes enterprises more incline to accept the idea of implementing any standard regulating their activities, including ISO standards on MSs. If management perceives ISO standards for MSs as a tool to provide the stability of high-quality performance, this belief also influences the choice to implement SMSs. This was the example of Polish enterprises, introduced SMSs on the eve of joining the EU, as well as with Ukrainian enterprises, reorienting themselves from the Russian market to the market of the EU.

We can draw the following conclusion about the composition of the factors influencing the formation of SMSs: a) there exists a group of aggregated factors, which includes the national competitiveness, the level of development of innovations of the national economy, the degree of corruption in the country; b) there also exists the second group, which includes sub-factors of aggregated factors. The second group of factors should include the following: the willingness to delegate authority, the level of development of management schools, the level of training of specialists in the field of technology, the level of education and awareness of consumers, the degree of customer orientation of business, the level of development of science in the country, the international recognition of scientific institutions of the nation, the share of high-tech products and science-intensive services in the national export volume, the development of the institution of intellectual property protection, the share of the market of national producers in the domestic market, the productivity of labour, the ratio of the growth rates of labour productivity and wages, the strength of the institution of standards application in business, the pressure of government regulation of business. To assess the national competitiveness, the ranking of Global Competitiveness Index by Word Economic Forum was used [Schwab, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019].

The Summary Innovation Index [European Commission-DG Enterprise and Industry, 2010, March 17, 2011, February 1, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020a, 2020b] was used to quantitatively represent the innovative level of economic development of the countries.

The Corruption Perception Index [Transparency International, 2020] was used to quantify the level of corruption in the country.

To select the indicators of the factors of the second group, the methodology of calculating the Global Competitiveness Index and the European Innovation Scoreboard were applied. Both methodologies underwent several changes over the period 2010-2019. As a result of the study, several indicators were selected, the values of which can be tracked sequentially by year for the period from 2010 (Tabl.1).

Table 1 - Environmental factors presumably influencing the formation of standardized management systems

Sector of environment	Factor indicators
Socio-cultural	Willingness to delegate authority
	Quality of management school
	Buyer sophistication
	Degree of customer orientation
	Reliance on professional management
	Strength of auditing and reporting standards
Technological	Quality of scientific research institutions
	Employment in knowledge-intensive activities
	SMEs with product or process innovations
	SMEs with marketing or organizational innovations
	Utility patents per million population
Legal	Intellectual property protection
Economical	Extent of market dominance
	Pay and productivity
	Company spending on R&D
	Public R&D expenditures
	Business R&D expenditures
	Medium and high-tech product exports
	Knowledge-intensive services exports
Political	Burden of government regulation

Source: *developed by the author on the basis of data from The Global Competitiveness Reports 2009-2020, European Innovation Scoreboard 2009-2020, European Innovation Scoreboard 2019 – Methodology Report*

For the study, 20 countries were selected, including 16 EU countries, the UK that was withdrawal from the EU on February 1, 2020, Serbia, which is a candidate for accession to the EU, Ukraine, as well as Russia, which officially belongs to European countries. The selected countries make up 40% of the independent states of Europe in terms of the number of countries and about 45% of the number of independent states completely located in Europe. Also, they occupy 77.4% of the territory of Europe, where 78.1% of the European population lives. The countries selected for the study produce about 87% of the GDP in PPP (purchasing power parity) of the countries that are entirely European (including Russia).

The positions of the selected countries in the global economy and innovation rankings are presented in Tabl. 2.

Table 2 - Position of the countries selected for the study in international economic rankings in 2019

Countries	Ranking by GDP (nominal) per capita	Ranking by GDP (PPP)	The Global Competitiveness Index Rankings	Rank/performance group* of country on the European Innovation Scoreboard
Ireland	4	47	24	13/SI
Netherlands	13	25	4	5/IL
Sweden	14	38	8	2/IL
Germany	18	5	7	10/SI
United Kingdom	25	9	9	8/SI
France	28	8	15	14/SI
Italy	33	11	30	22/MRI
Spain	39	15	23	18/MRI
Portugal	46	50	34	16/SI
Greece	50	53	59	24/MRI
Lithuania	51	84	39	23/MRI
Slovakia	52	69	42	25/MRI
Latvia	54	103	41	27/MRI
Hungary	58	54	47	26/MRI
Poland	62	20	37	30/MRI
Romania	67	35	51	37/MSI
Russian Federation	71	6	43	32/MSI
Bulgaria	83	72	49	33/MSI
Serbia	107	79	72	29/MRI
Ukraine	145	39	85	36/MSI

*author's abbreviation for terms in the European Innovation Scoreboard: IL – Innovation Leader, SI – Strong Innovator, MRI – Moderate Innovator, MSI – Modest Innovator.

Source: *developed by the author on the basis of data from [European Commission-DG Enterprise and Industry, 2020a; Schwab, 2019; The World Bank, 2020, n.d.]*

The resulting indicator of the impact of certain environmental factors on the implementation of the enterprise standardized management systems in any country is the number of valid certificates for management systems.

To compare the indicators of different countries, we used the approach proposed by us in an earlier study. For comparison, we calculated the relative indicators of the number of operating SMSs per 1000 enterprises: Total number of MSs formed following ISO 9001, ISO 14001, ISO / IEC 27001, and ISO 50001 per 1000 enterprises (Fig. 1) and Number of MSs formed following ISO 9001 & ISO 14001 per 1000 enterprises.

Note that in the statistical data of the EU countries, you can find the relative indicator of the number of certified management systems per population of the country. In our opinion, this approach is not objective, since standardized management systems are associated with enterprises and their activities, but not with individuals.

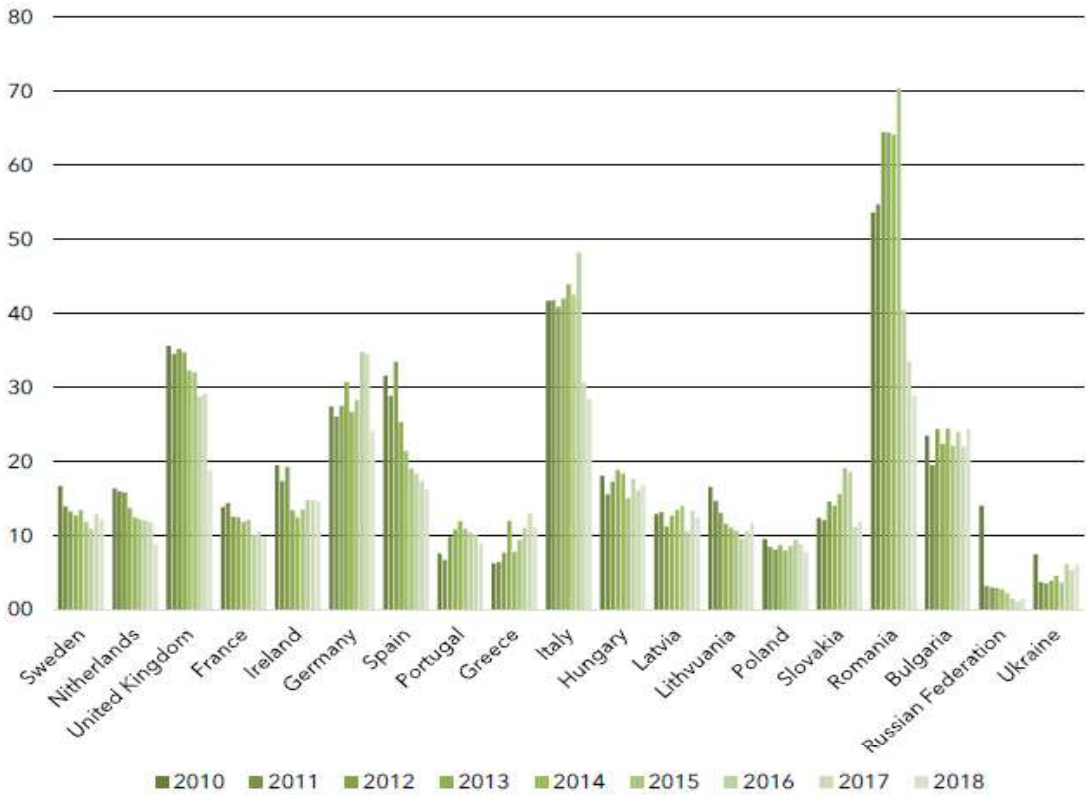

Figure 1 – Total number of management systems formed in accordance with ISO 9001, ISO 14001, ISO/IEC 27001, and ISO 50001 (with valid certificates) per 1000 enterprises
Source: *developed by the author on the basis of data from [Eurostat, 2020; International Organization for Standardization, 2020]*

The relative indicator of the total number of MSs shows the differences in prevalence levels and dynamics of SMSs across Europe. That is the reason to expect a variety of sets of factors stimulating the implementation of SMSs in different countries.

Thus, the second hypothesis is that each country has its own set of external environmental factors that influence their decision to introduce standardized management systems.

The third hypothesis is as follows: there exist similar configurations of the external environment of enterprises, which impact the introduction of standardized enterprise management systems.

International Organization for Standardization states that "the ISO Survey is not a database. The providers of the data are the certification bodies accredited by IAF members and they participate voluntarily. The level of participation fluctuates from one edition to another and can impact the survey results especially at the country level. Interpretations of the results and any conclusions on the trends should be made with this in mind" [International Organization for Standardization, 2020]. It follows that a full statistical analysis of the ISO Survey data cannot be performed. However, they reflect the general trend of change in the number of operating SMSs at the enterprises of the country and are suitable for undertaking a qualitative analysis.

Therefore, the aim of this article is to study the influence of country-level environment factors on the implementation of standardized management systems of enterprises.

Research results. The determination of the relationship between factorial and resulting characteristics is done with correlation analysis, the results of which then were put to qualitative discussion. Correlation analysis confirmed the hypothesis of the existence of a relationship between environmental factors and the implementation of standardized management systems of enterprises. Each country covered by the study, reveals the unique configuration of factors influencing the formation of the SMSs, which confirmed the second hypothesis. The result of the correlation analysis of the influence of the aggregated factors on SMSs is presented in Tabl. 3.

Table 3 - The nature of the relationship and the frequency of the environmental factor affecting the formation of SMSs

№	Aggregated factors	Sweden	Netherlands	Lithuania	United Kingdom	Germany	Italy	Spain	Greece	Russian Federation	Frequency
		correlation with relative index of SMSs (ISO9001+ISO14001+ISO/IEC 27001+ISO 50001)									
1	Global Competitiveness Index				–		–				2
2	Summary Innovation Index		–	–							2
3	Corruption Perceptions Index			–				+	+	–	4
		correlation with relative index of SMSs (ISO9001+ISO14001)									
1	Global Competitiveness Index				–	–	–				3
2	Summary Innovation Index	+	–	–							3
3	Corruption Perceptions Index		+	–	–			+	+	–	6

Note: Signs + (plus) and – (minus) show a positive or negative relationship between variables

Source: *developed by the author on the basis of data from The Global Competitiveness Reports 2010-2020, European Innovation Scoreboard 2010-2020, Corruption Perceptions Index 2010-2019.*

The different nature of the correlation allows us to conclude about the existence of different approaches to how management sees the role of SMSs in the relationship of the enterprise with its external environment in different countries. From our point of view, in countries where the relationship between the dynamics of corruption and SMSs is negative, the management of enterprises considers SMSs as a tool to counteract and balance the negative external influence of corruption, which, in turn, allows to create a healthier and motivating environment within the enterprise. These countries are known because of their developed culture of doing business and a significant number of institutions, which preserve and develop this culture. In this case, SMSs is likely viewed as a tool for protecting internal values from the corrosive influence of the external environment, aimed at maintaining its path to sustainable development.

In countries where the relationship is positive, business tends to ignore SMSs as a tool to protect the organizational culture; however, it uses standards mainly to modernize internal business processes. The latter is typical for countries that are active followers of innovation leaders [Romer, 1986, 1994]. If the national economy has a high level of development of business processes, then with the strengthening of corruption in society, the management of enterprises will rather try to prevent the implementation of SMSs to make their business less transparent from the external intrusion.

Thus, the absence of SMSs eliminates the need to undergo an audit and disclose information. At the same time, in countries where exists a close connection between SMSs of enterprises and the external environment, an increase in innovative activity counterbalance the decrease in management standardization. The Netherlands is a striking example of such a model of the interrelation of SMSs of enterprises with the aggregated factors of the external environment (the Netherlands show the largest number of environmental factors correlating with SMSs from the entire set of surveyed countries).

The influence of the innovativeness of the national economy on the formation of SMSs in enterprises was revealed in the Netherlands, Lithuania and Sweden. In Lithuania and the Netherlands, the intensification of innovative development compensates the slowdown in the spread of SMSs. Observed at the same time relative reduction in the number of SMSs is attributed to other reasons, far beyond the scope of the present article.

Sweden is traditionally credited with a high level of production of innovative products. Since SMSs are predominantly formed in the sphere of production, decrease SMSs may be attributed to the decrease in innovative activity.

The influence of competitiveness was revealed only in countries with a highly developed both economy and business processes in both production and trade (the UK, Germany, Italy). This explains the fact that a further increase in the competitiveness of the economies of these countries is carried out due to external expansion and leads to a decrease in business interest in standardizing business processes.

The frequency of the revealed correlation for the factors of the second group influencing the formation of SMSs is presented in Tabl. 4.

Table 4 - Frequency of environmental factors affecting the formation of SMSs (number of countries where such an influence has been identified)

№	Factors	Frequency	
		correlation with relative index of SMSs (ISO9001+ISO14001+ ISO/IEC 27001+ISO 50001)	correlation with relative index of SMSs (ISO9001+ ISO14001)
1	Public R&D expenditures	6	8
2	Employment in knowledge-intensive activities	6	7
3	Company spending on R&D	5	7
4	Quality of scientific research institutions	6	6
5	Quality of management school	6	5
6	Willingness to delegate authority	4	6
7	Utility patents per million population	5	5
8	Strength of auditing and reporting standards	5	5
9	Burden of government regulation	4	5
10	Knowledge-intensive services exports	4	5
11	Business R&D expenditures	4	4
12	Buyer sophistication	3	4
13	Medium and high-tech product exports	3	4
14	SMEs with product or process innovations	4	3
15	SMEs with marketing or organizational innovations	3	3
16	Pay and productivity	3	3
17	Intellectual property protection	2	3
18	Degree of customer orientation	2	3
19	Extent of market dominance	2	2
20	Reliance on professional management	1	2

Source: *developed by the author*

The results of the analysis show that in European countries the most common factors influencing the formation of SMSs are technological and economic ones, related to the innovative development of the economy, and socio-cultural factors, which reflect the degree of development of management in the country and the tradition of using standards in doing business. The factor of government regulation pressure on business was also extensive. The determined correlation of the most common environmental factors with SMSs is presented in Tabl.5.

In Bulgaria, Russia and Ukraine none of the selected environmental factors showed a significant correlation with SMSs. From our point of view, this indicates that in these countries the largest number of enterprises ignores the tendencies of changes in the external environment when forming SMSs. As a result, the complexity of such enterprises, including the complexity of their management systems, does

not correspond to the complexity of the external environment, which makes them vulnerable to its impact, lagging behind external development or ineffective because of excessive internal complexity, which hinders their sustainable development.

Table 5 - Correlation of environmental factors with MSs formed in accordance with ISO 9001&ISO 14001

Factor No*	United Kingdom	France	Netherlands	Ireland	Italy	Hungary	Lithuania	Slovakia	Latvia	Germany	Poland	Spain	Romania	Sweden	Portugal	Greece	Serbia
1		+	+	+	+	+		+							–		+
2	–		–	–			–					–	–	–			
3	–	–	–	–								–		+		+	
4	–	–	–				–								+	+	
5			–	–						+	+		+				
6	–				–			–						+		+	
7		–					–							–	+	+	
8			–		–								–			–	+
9	–	–	–	–			–										
10	–	–	–			–						–					
11			–				–					+	–				
12							–					+		+			–
13			–			–			–				–				

*Factor No according to tabl.4

Note: Signs + (plus) and – (minus) show a positive or negative relationship between variables

Source: *developed by the author*

The data in Table 5 allow us to draw the following conclusions: a) it is possible to identify countries with a similar configuration of factors affecting SMSs of enterprises, which represent certain basic types; b) it is possible to single out the countries that, by the configuration of their factors influencing SMSs of enterprises, tend to the basic types; c) there exist countries whose factor configuration is unique.

Great Britain, France and the Netherlands represent the first type, whose distinctive features are as follows. When deciding on the implementation of SMSs, enterprises first consider trends and priorities in public funding for the development of science and technology; enterprises use developed business processes; therefore, SMSs do not stand as an obligatory tool for increasing competitiveness and efficiency; enterprises are focused on innovative development, which is built on the knowledge economy, developed institutions, and management practices. This type we call 'denying'. Ireland, Italy, Hungary, Lithuania gravitate to it, although their configuration of factors influencing the formation of SMSs is much narrower.

One-factor types of the external environment influencing adoption of SMSs are also revealed, the example of which is Latvia. In Latvia, the larger is the share of exports of medium – and high-tech products, the stronger the integration into the EU space, and the stronger is the perception of the 'denying' type of external influence on the formation of SMSs. In Germany and Poland, the quality of the management school turns out to be the main factor of the external environment influencing the formation of SMSs. That is the management institutions and practice of management form the common business opinion about the need for SMSs, and their efficiency, and effectiveness.

The identified types of influence of the external environment on SMSs confirm the third hypothesis that about the existence of similar types of configuration of the external environment of enterprises that stimulate the implementation of standardized management systems.

The configurations of environmental factors influencing the formation of SMSs in other surveyed countries are unique. They comprise factors with contrary directed effects on SMSs. Configuration of the factors of Spain and Romania reveals a strong influence of the 'denying' type of connection between the external environment and SMSs of enterprises.

In Sweden, SMSs are positively correlated with increased R&D spending, mounted willingness to delegate, and consumer sophistication. At the same time, an increase in the share of employment in knowledge-based activities and an increase in patents per million of the population lead to a decrease in the need for SMSs. This again reveals the feedback of the innovative creative way of development in Sweden as opposed to standardization and bureaucratization of business processes, which was previously revealed in the analysis of the influence of aggregated factors.

The configuration of factors in Portugal most closely resembles that in France, but all factors have an opposite effect on SMSs.

Factors influencing the formation of SMSs in Greece have a positive relationship with SMSs, except for the strength of auditing and accounting standards. Contrary to our expectations, the tradition of using standards in the company's activities showed a positive relationship with SMSs only in Serbia. In the other four countries, including Greece, where such correlation with SMSs was detected, the nature of this connection turned out to be negative.

Conclusions. As a result of the study, it was confirmed that there was a connection between environmental factors on the implementation of SMSs, and groups of generalized (aggregated) factors and their components were identified. It seems interesting that there is no unified model or a unified configuration of environmental factors for making decisions on the implementation of SMSs. The studied countries can be divided into groups not only by influencing factors but also by this direction. The negative influence of environmental factors on the implementation of SMSs is revealed, which suggests that the development of SMSs itself is not an indispensable, universal condition for the growth of the competitiveness of enterprises and the economy as a whole. This issue should be resolved in the context of the dominant nature of management, the model of innovative development and place of a country in the “innovator – follower” pair within the framework of the endogenous theory of innovation and the model of economic development in general. It is also important

that there is a connection between the introduction and development of SMSs and the extent of corruption, as well as the intensity of government intervention in the economy and dominant management practices. At the same time, the expected and seemingly logical relationship between the standardization of certain operations and types of activities, such as the implementation and practice of using accounting and auditing standards, did not show either a positive or a negative correlation for most countries. In those countries where it was identified, the relationship was negative.

Concerning Ukrainian economy, the question of the factors affecting the external environment on the implementation of SMSs remained unresolved, which provides an obvious direction for further research. In a broader perspective, it is important both to build quantitative models linking the factorial and resulting features of this process, and to identify conditions that cause a change in the nature of the relationship between innovation and the development of SMSs from positive to negative. It is also of interest to clarify the relationship between the degree and nature of knowledge management with the implementation of SMSs. Further research should cover a larger number of countries and factors influencing the formation of SMSs. We believe that this will make it possible to identify a greater number of basic types of external environment influencing the formation of SMSs in enterprises of different countries and regions.

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