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## **ANALYSIS OF THE CAUSES THE QUANTITATIVE CHANGES AND TRENDS IN CONFERRED ISO 9001 CERTIFICATES IN POLAND. RESEARCH BASED ON THE DATA FROM AUDITS**

### **4.1 INTRODUCTION**

Since ISO 9001 Standards appeared, they were used as guidelines for continuous operation improvement of enterprises. However, they were applied gradually not only in production enterprises but also in the case of services. It causes next changes, which appeared not only in construction but first of all, in substantial content of standards. The first revolutionary change in content was the release of ISO 9001:2000 Standard. The basis of these changes constituted the adaptation to current trends and conditions at the market. The next amendments to the content were not so decisive any more. Changes related only to minuteness of detail of separate issues, or changes in definitions. The release of the standard including next changes is planned at the end of 2015. This time the planned changes will be considerably wider than the earlier amendments. Not only the content will undergo the change, but also arrangement as well as the scope that standard shall include.

However, do amendments may influence the increase or decrease of enterprises quantity that subject to certifications? It is worth to think over if enterprises take the trouble to introduce changes connected with the certification, by implementing or supporting it, due to internal need of the improvement? Are there considerably more factors that determine the wish to possess as documentary form the fulfilling the specified requirements?

### **4.2 PURPOSE AND CHARACTERISTICS OF RESEARCH**

The aim of the paper is to present how Polish enterprises assume an attitude towards the trends of certifications that appear at the market. Are the changes at the world market associated with fashion or issue of new release of the standard have the influence on the quantity of certificates granted in the country, and if so, to what extent?

In the research, data were collected pertaining to 2014, over a group above 300 chosen enterprises, without taking into account the factor of the location that is the provinces or localization in more industrialized region of the country.

The criteria of the division were as follows:

- the sort of enterprise activity – division into 12 general sectors that were divided to smaller groups;
- the size of the enterprise – in terms of quantity of current full time employments, with division into micro, small, medium, large and very large enterprises;
- duration of system possession – i.e. the period of possession by means of documented method the ISO 9001 certificate, with division into periods below one year, between 1 and 3 years, from 3 up to 6 years, from 6 up to 9 years, and duration longer than 9 years;
- the kind of conducted audit – that is certifying audit, recertifying one as well as the first and second supervision audits.

Based on conducted research, the below mentioned relationships were analysed: size, sort of activity of given enterprise (trade), as well as duration of possession by an enterprise the certificate pertaining to ISO 9001 Standard as well as the type of recently conducted audit.

### 4.3 STRUCTURE OF ENTERPRISES IN POLAND

As mentioned earlier, enterprises were divided into 12 sectors. Each of them possesses definite kind or kinds of activities that enterprise is composed of. Tab. 4.1 presents division of enterprises that were included in the research together with the division into separate sectors.

During the research there were check companies form almost every business sector. In results we received interesting comparison between branches. The biggest group of the companies that were checked during the research constitute establishment related with almost any kind of industry business.

Comparing results from research to number of certifications in Poland industry, we receive similar results than when we check only new data. In 2012 trade with the biggest number of new certifications were “Basic metal products”, and that was 9.36% of all certificates (Fig. 4.3). Now, after 2 years, that is still the leader. In new research for over 300 companies, there are 66 from sector Metal processing and manufacturing of metal products”.

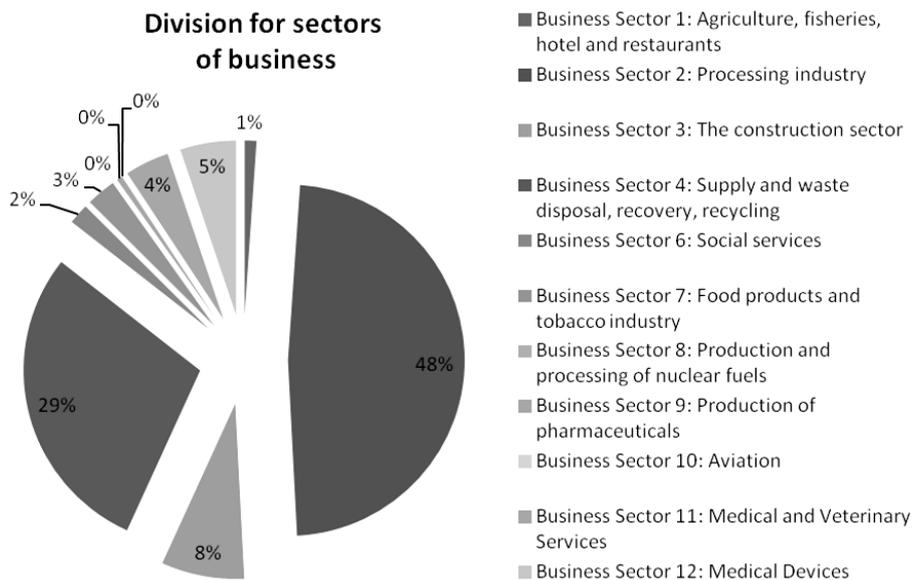
As regards the division into trades of enterprises under research – the processing industry predominates. Processing industry includes 48% of entities under research (Fig. 4.1). However, this is the sector that contains the largest differentiation due to sort of activities that enterprise is composed of; thus the high result. It is worth to notice that they are trades that as the first ones began to implement the ISO 9001 Standard. That’s why we may assume that it operates there for the longest time; just these branches have the largest experience working with ISO 9001 and their knowledge is maximally developed. These are also common firms that may precisely specify, according to their opinion, what advantages and what disadvantages has possessing the standards, just due to experiences connected with them.

**Tab. 4.1 The quantity of enterprises was described using more detailed division  
– i.e. into branches in separate sectors**

The division of enterprises in industries, in various sectors	Number of companies	The division of enterprises in industries, in various sectors	Number of companies
<b>Business Sector 1: Agriculture, fisheries, hotel and restaurants</b>			
Agriculture and forestry, fisheries and fish farming	3	Hospitality, Restaurants and Catering	1
<b>Business Sector 2: Processing industry</b>			
Metal processing and manufacturing of metal products	66	Glass industry, ceramics, stones and minerals processing	5
Manufacture of rubber and plastic	27	Textiles & Clothing	4
Mechanical engineering	21	Timber industry	2
Manufacture of office machinery, equipment and data processing equipment, electrical engineering, precision mechanics, optics	16	Production of cement, lime, plaster, articles of concrete, lime and plaster	3
Chemical industry	6	Publishing industry	0
Paper industry	6	Shipbuilding	0
Printing industry	6	Coking plants and oil industry	0
Service and repair of automobiles and related products used	5	Manufacturing nec (furniture, toys, musical instruments)	0
Manufacture of basic metals	5	Leather industry	0
Construction of other vehicles (vehicles, rail vehicles, motorcycles, bicycles)	5		
<b>Business Sector 3: The construction sector</b>			
Architecture	23	Mining, sourcing stones	5
<b>Business Sector 4: Supply and waste disposal, recovery, recycling</b>			
Trade, wholesale and retail	42	Recycling	2
Provision of services for businesses	17	waste management	2
Research and scientific experimentation and engineering	16	Transmission of information and telecommunications	2
Transport and Storage	9	Electroenergetics	1
Administration building, developing, renting of machinery and household appliances, credit institutions and insurance, financial services, banking-in, leasing, loans, insurance	6	The provision of other public and personal services	1
Data processing, computer service, software delivery	5	Public management	0
Waterworks, heating	3	Gas industry	0
<b>Business Sector 6: Social services</b>		<b>Business Sector 7: Food products and tobacco industry</b>	
Education, social services without accommodation	7	Food, Beverages and Tobacco	10
<b>Business Sector 8: Production and processing of nuclear fuels</b>		<b>Business Sector 9: Production of pharmaceuticals</b>	
Production and processing, special nuclear material and fuel	0	Industry pharmaceutical products	2
<b>Business Sector 10: Aviation</b>		<b>Business Sector 12: Medical Devices</b>	
Aviation	0	Production of medical devices	19
<b>Business Sector 11: Medical and Veterinary Services</b>			
Therapeutics	15	Social welfare	0
Veterinary	0		

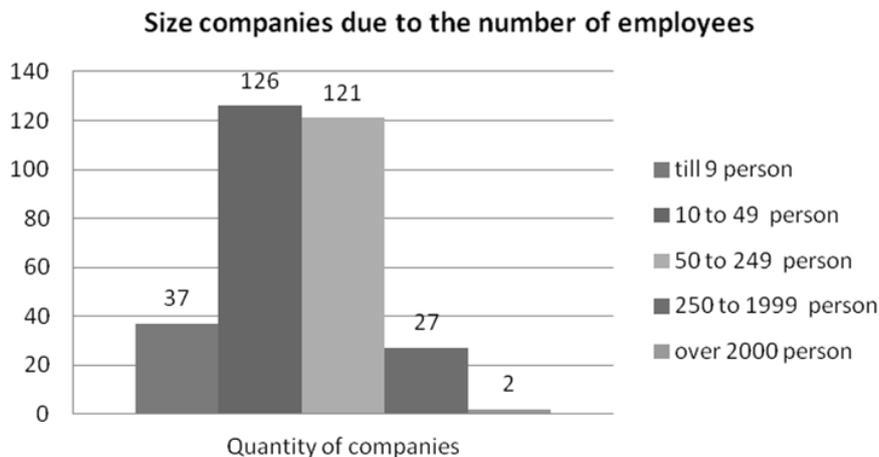
Source: Own elaboration

Analysing the structure considering the size of enterprises (Fig. 4.2) the largest interest in possession or maintenance the certification appears in the group of small and medium enterprises. Just these enterprises constitute the most numerous group in Poland; according to Main Statistic Office (GUS) data, in 2013, among over 80 thousand of enterprises in Poland, 78% employ below 50 employees. The next group is medium entities group employing from 50 up to 249 persons – this makes up 18.1% of all registered enterprises in the country. Comparing results for Poland and UE firms (Fig. 4.4), the largest gross value added (GVA) is generated by companies that employ above 249 persons, firms employing lesser amount of employees constitute over 50% generated value. According to PARP data, within recent years, participation of small and medium size enterprises successively increases in creating the national gross product. In 2004-2009, the growth from 21.9% up to 23.9% followed for large enterprises as well as from 8.9% up to 10.1% in case of medium enterprises.



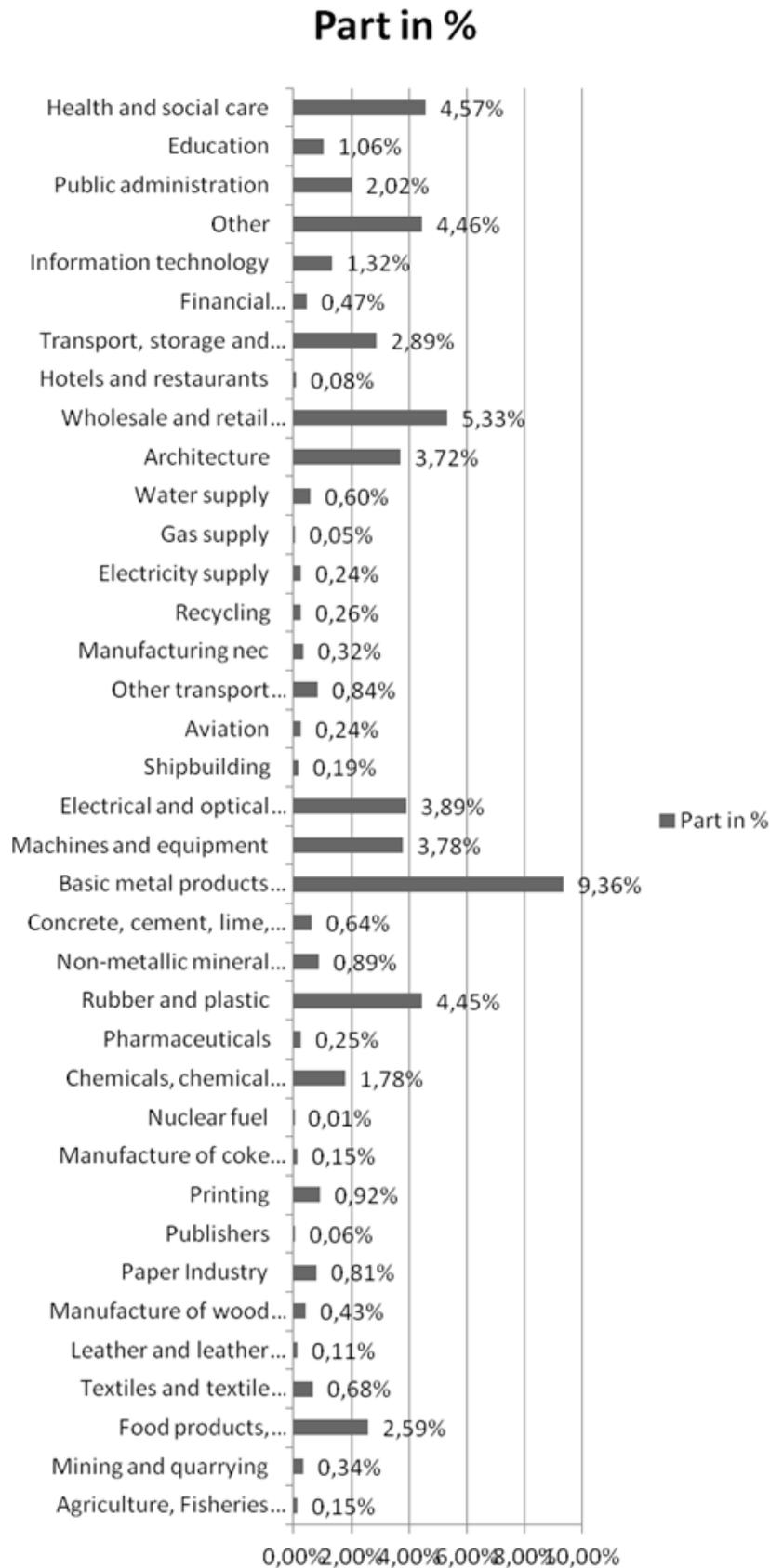
**Fig. 4.1 The division of enterprises in the sector, due to kind of business**

Source: Own elaboration



**Fig. 4.2 The division of enterprises according to number of its employees**

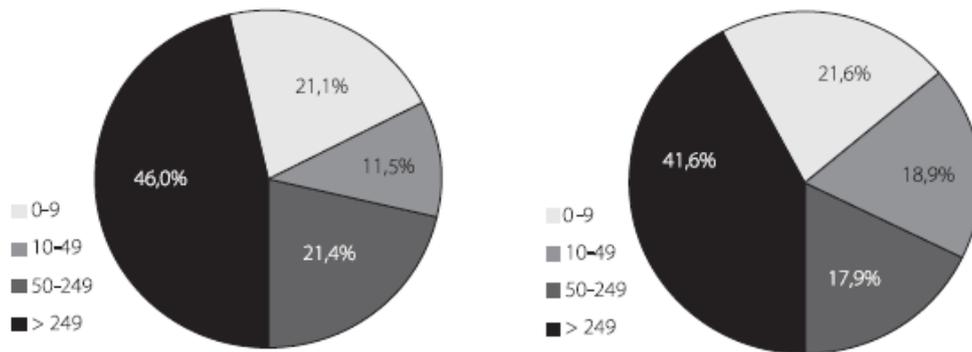
Source: Own elaboration



**Fig. 4.3 Number of certifications ISO 9001 in Poland, by industry (in 2012 year)**

Source: Own elaboration based on: [2], [3]

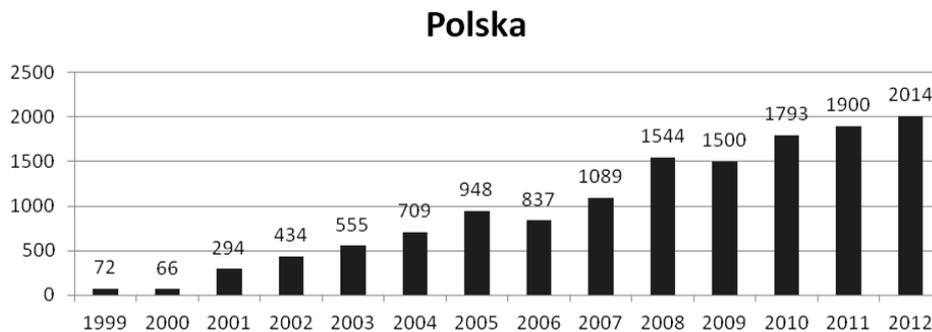
In case of such enterprises, possessing the certificate of specified scope allows being competitive, especially when more than one enterprise exists of similar profile of activity or prices in given area. At present, markdown stopped to be the best opportunity to encourage for co-operation. Regardless, whether this pertains to raw material deliveries, products or services. At present, the price is not any more the only criterion taken into consideration while linking co-operation. Frequently, the certification becomes the requirement or one of the terms of co-operation within given scope. This is a form of guarantee for other entities that given enterprise fulfils appropriate requirements.



**Fig. 4.4 The structure of generating of gross value added in the business sector by size of enterprises in Poland (left) and the UE (right) in 2009**

Source: [1]

Taking into consideration fluctuations in trends of certifications, certain dependences appear between trends in certification in the world and in Poland and the results of conducted research. In 1999-2012, slight loss of balance pertaining to increase of number of granted certificates appeared twice at certification market in Poland (Fig. 4.5).

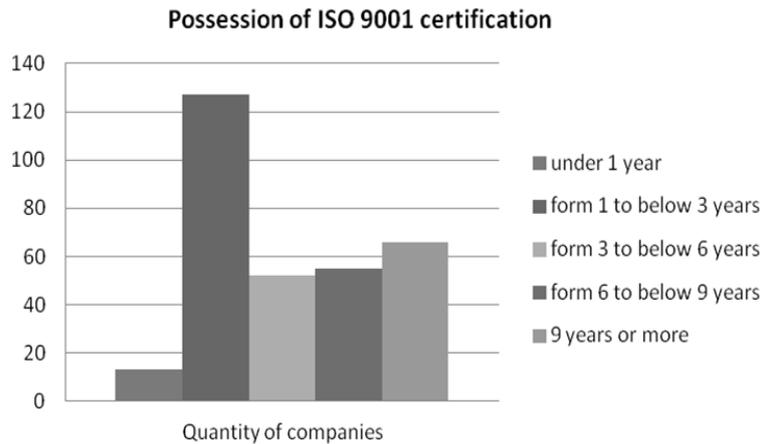


**Fig. 4.5 Number of certificates ISO 9001 in Poland in years 1993 to 2012**

Source: [3]

This is equivalent with results of research conducted at present. Comparison of certificate possession duration in enterprises presented in Fig. 6 defines that enterprises having implemented and applied certificate within the period of time from 1 to 3 years constitute the largest group of enterprises. Imposing these data onto information on changes in quantity of granted certificates in Poland within the recent years, certain convergence appears.

The largest group of enterprises taking into consideration the time of possession of the system agrees with the data on the growth of quantity of certificates in our country. The second group as regards the size, are enterprises that possess the certificate 9 or more years. According to graph in Fig. 4.6, these enterprises are included within the range of enterprises that achieved the first certification before 2006, that is in the period of time in which permanent growth of the number of certification was observed. Thus the fact may be confirmed that a lot of enterprises that obtained the certification in the past still maintain it.



**Fig. 4.6 The division of companies given the time of having ISO 9001 certification**

Source: Own elaboration

Duration of certificate possession corresponds with types of research conducted. According to research conducted the largest participation in conducted research had supervision audits (Fig. 4.7). One may conclude that majority of enterprises under research are enterprises possessing implemented and operating, at least since several years, system of the quality management. Entities that recertificate constitute also a large group. The number of enterprises that just implement the certificates is the least numerous group. At present this is 8% among enterprises subject to research. This fact may present not very strong wish to possess the certificate among new or existing enterprises.



**Fig. 4.7 Number of audits carried out, divided by type**

Source: Own elaboration

This is also connected with the fact that large enterprises or smaller ones, but of stable position at the market often already possess certificates. Small enterprises or these ones that just begin the activity, due to changes at the market, may postpone the certification because of costs connected with it.

This fact is also the determinant of economic level. Referring to previous research connected with trends in certification we may assume that Poland reached higher economic level as well as certain degree of certificates saturation pertaining to ISO 9001; thus there are more audits conducted in order to maintain existing system than to start its possession.

## CONCLUSION

At present, this is frequently to mention about the trend to reduce the number of granted certificates. This is noticeable in the world, but this fact should not be considered as a completely and unambiguously negative factor. Reduction of quantity of completely new certifications can also be the determinant of maturity of given country. Because this is still often required to specify fulfilment of certain criteria, both in the international trade as and national one, we cannot approach to its development in the completely unambiguous way.

Changes that proceed in enterprises structure in our country are quite standard if they are analysed taking into consideration the trends that may affect them. The market of certification has been filled to certain degree. However, new release of ISO 9001:2015 Standard issued this year, could change this approach. Until now, every new update constituted the point in which we could clearly see the growth in interest for certification. Revolutionary form and the change of customer group could produce a large interest, but now, not only in production branches but mainly in services.

## REFERENCES

- 1 Główny Urząd Statystyczny w Polsce. [Online]. Available: <http://www.stat.gov.pl>. [Accessed: Jan. 9,2015].
- 2 International Organization for Standardization [Online]. Available: <http://www.iso.org>. [Accessed: Apr. 9,2015].
- 3 A. Juszcak-Wiśniewska, M.J. Ligarski. „Zmienność trendów w certyfikacji wg ISO 9001 na świecie i w Polsce”. *Systemy wspomaganie w inżynierii produkcji. Jakość i bezpieczeństwo*. J. Sitko, B. Szczęśniak (ed.). Gliwice: P.A. Nova S.A., 2014, p. 110-119.
- 4 A. Juszcak-Wiśniewska, M.J. Ligarski. „Design of research tool for problems analysis in quality management systems”. *Moderni matematicke metody v inženyrstvi*. Cesko-polsky seminar (3mi). Sbornik z 23, seminare, Horni Lomna, 2.6.-4.6. 2014. Ostrava: Vysoka Skola Banska-Technicka Univerzita, 2014, p. 22-26.
- 5 U. Kobylińska. „Ewolucja czy rewolucja?”. *Zmiany w standardzie ISO 9001:2015*. Białystok: Wydawnictwo Politechniki Białostockiej, 2014, Available: <http://www.zneiz.pb.edu.pl>. [Accessed: Apr. 17,2015].

- 6 M.J. Ligarski. *Podejście systemowe do zarządzania jakością w organizacji*. Monografia. Gliwice: Wydawnictwo Politechniki Śląskiej, 2010.
- 7 Polska Agencja Rozwoju Przedsiębiorczości. [Online]. Available: <http://www.parp.gov.pl>. [Accessed: Apr. 13,2015].

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IN CONFERRED ISO 9001 CERTIFICATES IN POLAND.  
RESEARCH BASED ON THE DATA FROM AUDITS**

**Abstract:** *The article presents the results of research conducted on the basis of data from audits. Comparison of the results of this research, with information related to trends and volatility in the certification, allowed the presentation appearing depending between them. It was also touched on the information about new edition of ISO 9001: 2015, how many an what kind of changes it may cause in the quantities of new and maintained certificates among enterprises. In summary of that article, has been presented the possible influence of factors determining changes but not only the quantity but also the business structure undergoing certification companies.*

**Key words:** *certification, ISO 9001, quality management systems*

**ANALIZA PRZYCZYŃ ZMIAN ILOŚCIOWYCH ORAZ TRENDÓW  
NADAWANYCH CERTYFIKATÓW ISO 9001 W POLSCE.  
BADANIE W OPARCIU O DANE POAUDYTOWE**

**Streszczenie:** *W artykule przedstawione zostały wyniki badań przeprowadzonych w oparciu o dane poaudytowe. Zestawienie wyników tych badań z informacjami związanymi z trendami oraz zmiennością na rynku certyfikacji, pozwoliło na przedstawienie pojawiających się między nimi zależności. Poruszony został także temat wprowadzanego nowego wydania normy ISO 9001:2015, z punktu widzenia zmian w ilościach nowych oraz utrzymywanych certyfikatów wśród przedsiębiorstw. W podsumowaniu opracowania zostały także możliwe wpływy czynników warunkujących zmiany w nie tylko ilości nadawanych certyfikatów ale także strukturze przedsiębiorstw poddających się certyfikacji.*

**Słowa kluczowe:** *certyfikacja, ISO 9001, systemy zarządzania jakością*

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*Date of submission of the article to the Editor: 04/14/2015*  
*Date of acceptance of the article by the Editor: 05/11/2015*