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Giving-up Management System Certification: a Potential Early Warning Signal?

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The paper presents the dynamics in number of top management system certificates (ISO 9001, ISO 14001) focusing on the situation in Slovenia in the last two years when a significant increase of cancelled certificates was noticeable. We studied this phenomenon in order to find out its reasons and effects on the performance of the organizations. Some recognized relations between quality management systems and company performance from literature review were used for setting hypotheses which were analytically proved. We assumed that quitting management system certificates was related to decrease in business performance. Empirical part of our research was based on the data of Slovenian certification bodies and on published annual financial reports of Slovenian organizations. In the survey some characteristics and performance of the organizations which gave up certification were analysed. We came to interesting findings that cancelling certificates was related to decrease in business performance and often even to closing of organizations. The downsizing of the business was increasing through the time. So, 2 years after cancelling certificates only 8% of the organizations still present growth in their income and revenue, besides almost 40% of them quit or would have to quit their business. It was also found out that the business performance after cancellation of the certificates was related to the business performance before it and to the reason for cancellation as well. Two years after cancellation there was a 3-times higher proportion of failed organizations (= 45% of previously non-profitable organizations) among the organizations that had operated at a loss before the cancellation of their certificates, compared to those previously having a profit. Among the claimed reasons for certificate cancellation organizational changes (in 35% of all the organizations losing certificates) and cancellation of certificates by certification bodies (in 41% of these organizations) were the most common ones related to the failure of these organizations.

Key words: management system (MS), quality management system (QMS), ISO 9001, ISO 14001, certificate, business performance,

1 Introduction

Organizations can improve their business performance by implementing management systems (MS) according to international or national standards and models. The world's largest developer of voluntary International Standards for business, government and society is International Organization for Standardization (ISO). Its portfolio in September 2008 comprised more than 17 400 standards that provide practical solutions and achieve benefits for almost every sector of economic activity and technology. Of these, ISO 9001:2000 and ISO 14001:2004 are among ISO's most well known and widely implemented standards ever. They give the requirements for, respectively, quality management and environmental management systems. They are used worldwide by businesses and organizations large and small, in public and private sectors, by manufacturers and service providers, in all sectors of activity. Their number is still increasing year after year. On the global level it exceeded 1.100.000 ISO 9001 certificates and 250.000 ISO 14001 certificates issued to the end of the year 2010 (ISO, 2011).

Many organizations decide to have their MS independently audited and certified as conforming to the standards. Certification is not a requirement of the standards themselves (ISO, 2008). Systems can help organizations to achieve benefits for themselves and for their customers even if they are implemented without certification (Dearing, 2007). Nevertheless, many thousands of organizations have chosen certification because of the perception that an independent conformity confirmation adds value.

However, some organizations decide after a period to give up certification. We tried to analyse this phenomenon in Slovenia in years 2008 to 2011 where total number of ISO

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certificates in Slovenia was still slightly rising, but at the same time the number of cancelled certificates was increasing even faster than the number of issued new ones. There were 1886 ISO 9001 certificates and 438 ISO 14001 certificates issued at the end of the year 2007 (ISO, 2008). In the following years certificates were issued and cancelled as follows (ISO, 2011):

- in the year 2008: 182 new issued and 105 cancelled ones;
- in the year 2009: 187 new issued and 142 cancelled ones;
- in the year 2010: 217 new issued and 166 cancelled ones.

A noticeable number of cancelled MS certificates in not only a Slovenian problem. Stagnation or even decline in the ISO 9001 certification has already been noticed in some developed countries in the world as well. Authors have already raised questions about it (Psomas and Fotopoulos, 2009). Besides, there is only a rare research about quitting MS certification. The results from previous empirical research about benefits of the MS certification are ambiguous (Claver et al., 2002; Martinez-Costa and Martinez-Lorete, 2007; Psomas and Fotopoulos, 2009), as well. Some authors claim that there is a low benefit/cost ratio from certification itself. They even state that a certificate is not needed as there is nothing better than having a quality product or service to prove how good your quality system is (Dearing, 2007).

The purpose of our paper is therefore to investigate which kind of organizations decide to give up MS certification[1], why they do it and how it is related to their business performance (one or two years after certificate cancellation).

2 Management system certification and expected effects in business performance of organizations

There is a wide range of empirical research related to implementing the ISO 9001 Standard and its impact on the business performance of organizations. Some research shows a significant relationship between implementation of the QMS and the improved competitiveness and performance of organizations (Claver et al., 2002; Heras et al., 2002; Alič, 2003:107-108; Dimara et al., 2004; Piskar, 2005; Magd, 2008). For instance, Mathews (2005) claims that major benefits of purchasing from the ISO 9000-certified companies include better, assured and consistent product and service quality; prompt and speedy supply (shorter delivery lead time); in this way there are fewer complaints and a better image for the company. Improved response to the customer complaints is seen as the most significant positive change in performance demonstrated by certified companies. On the contrary, other research concludes that the relationship is either weak or non-existent (Abraham et al., 2000; Singels et al., 2001; Chow-Chua et al., 2003; Martinez-Costa and Martinez-Lorete, 2007). A quote in Terziovski et al., (2003) stated that: "It appears that companies that are at the beginning stages of their quality journeys find that the ISO 9000 series of standards provides them with a guide for implementing a basic quality system. But for companies with good quality systems, the standard often just adds costs, delays and burdensome documentation, rather than providing any competitive advantage."

There is no clear support for the claim that ISO certification alone automatically leads to the better performance of organisations (Singels et al., 2001); instead, certain conditions should be met (Rusjan and Alič, 2010). If the ISO 9001 is well applied it is expected to make a significant improvement in the company's performance (Singels et al., 2001), otherwise the effects of such a system are low and the costs are high.

The impact of quality standards on the competitiveness and business performance of an organization is greater in those organizations that were internally motivated (improvement reasons) for gaining ISO 9001 certification, while this impact is minor in organizations that were forced to introduce the quality standard by external pressures (marketing reasons) (Abraham et al., 2000; Singels et al., 2001; Heras et al., 2002). Motivation is a basis for development of other key MS performance drivers like management commitment and support, relationship between the objectives of the MS and the strategic objectives of an organization etc. (Dimara et al., 2002; Sharma and Gadenne, 2002; Van der Wiele and Brown, 2002).

Organizations can decide whether to certify their MS or not. Certification of the MS is an easy way to signal the commitment of the organization management to maintain and develop the MS. It is a signal to all the stakeholders. As a mater of fact, several companies expect to be "rewarded" by the environment for just gaining a certificate (Fuentez et al., 2003).

Organizations choose certification according to perceived following benefits which directly or indirectly lead to better business performance (Joubert, 1998):

- A certificate as a formal sign of an implemented MS can be used in marketing as a proof of a responsible organization that obeys common business rules. An organization can use it as a promotional tool. Thus such a certificate can help enhancing company image and reputation and improving confidence of the customers, both leading to marketing benefits like expanding the business (e.g. new customers, new orders, entering new markets etc.) (Magd and Curry, 2003; Fuentez et al., 2003; Thawesaengskulthai and Tannock, 2008).
- An external audit as a part of the certification process means an additional pressure to the organization. By focusing on meeting the standard's requirements external audit assures better MS performance and (considering the effects of properly implemented MS) better business performance, as well (Joubert, 1998).

1 The expressions "giving up" or "quitting" certification are used in the paper where the emphasis is on the decision of organizations for not keeping certificates any more. "Withdrawing" a certificate is used for an act of taking a certificate by a certification body to prevent its use if the certified organization doesn't meet the requirements any more. In other cases, a certificate can "expire" (when the date "valid to" is reached) or should be "cancelled" for some other reasons. All these actions end in "cancelling" a certificate by a certification body (no matter what the reasons behind are). The results are "cancelled" or "lost" certificates.

- External audit findings can be a source of improvements, leading to better MS performance and so to better business performance (Joubert, 1998; Corbet et al., (2002).

Organizations can see disadvantages in certification, as well:

- Certification requires money! The costs can be considerable especially for micro and small organizations[2] (Joubert, 1998; Anderson, Daly and Johnson, 1999; Martinez-Costa and Martinez-Lorete, 2007). However, if the MS is implemented properly, the benefits of the system and its certification should overweight the related costs.
- Certification and preparing for it takes time and some additional workload[3] (Joubert, 1998). If an organization only wants to pass the certification audit with as low people engagement as possible, it develops only basic MS procedures, though they aren't really accepted as a management tool and put into use. Processes aren't performed in the way they should be presented to the auditors of the certification body (CB). So there is much more extra work to be done just before the audit to prepare some formal evidence for the auditors to convince them that at least low-level criteria for certification are met. Of course, such activities are stressful, make extra costs and some kind of disturbance to a normal business process (Magd, 2006). Hence, organizations that didn't intend to develop and haven't succeeded in developing an effective MS for managing their everyday operations, perceive MS tasks required by the standard as a burden and unnecessary cost (Dearing, 2007).
- Organizations have other possibilities to persuade their customers and the social community of their quality and responsibility. They understand that quality of their products and services itself is more convincing proof than any MS certificate (Dearing, 2007).

Considering possible disadvantages of MS certification some organizations don't seek certification. Such decision itself wouldn't influence the internal effects of the implemented MS if management commitment and internal control over the MS remained strong and stable. As a matter of fact, if there is no external verification, there is no pressure to obey the rules, meet the MS requirements properly and continuously improve the MS. As a result, omitting certification often leads to decrease in internal interest to keep and further develop an effective MS. With decline in internal interest for the MS, management support for operating it is declined as well.

There is a noticeable difference between not certifying a MS at all and losing an issued certificate. In fact, losing ISO 9001 certification negatively impacts the customer's opinion about the organization's reputation in terms of quality (Joubert, 1998; Van der Wiele et al., 2005). This can significantly affect the revenue. Consequently, losing ISO 9001 certification can be worse than not achieving it at all (Joubert, 1998;). The effects of the MS and its contribution to business performance of a company decreases as well, after some time positive effects of the MS become weak or hardly noticeable, the negative (e.g. lower image) feedback prevails. In addition to this, giving up certification can also be a strong message to employees about weak support to MS by top management. So less effort of the employees for maintaining an effective MS can be expected. As a result some additional decline in MS and business performance can appear. Some empirical research gives support to this claim. For instance Corbet et al. (2002) carried out a research in three business sectors in USA over a 10-year period (1988-1997) including 7598 organizations. The research showed that in this period non-certified organizations experienced substantial deteriorations in return on assets, productivity and sales, while certified ones generally managed to avoid such declines.

Related to the expected positive effects of properly implemented certified MS on business performance (explained above), we can assume that giving up certification would cause a lack of expected positive effects of the MS after a time period. So a decline in business growth and in income could be expected. On this basis we developed the first hypotheses:

H1: Cancellation of ISO certificates is related to a decline in business performance of the organizations.

Authors analysed the relationship between period of having a certificated MS and business performance of the organizations. This relationship is expected while continuous improvement of the MS as a request of a standard should contribute to the MS performance and consequently to the business performance of the organization. Some empirical research supports this relationship (Ferguson et al., 1999), some not (Llopis and Tari, 2003). Similarly, we assumed that giving up certification of MS followed with abandoning the MS step by step would lead to decrease in business performance, which is also gradually increasing through the time. Therefore we suggest the following hypotheses:

H2: A decline in business performance of the organizations is related to the time passed after cancellation of their ISO certificates.

Furthermore we supposed that growth or decline of business performance of the organization after cancellation of the certificates is related to the previous business performance. It was assumed that organizations having good results (profit, growth in revenue and income) should have developed their strengths. The MS could have helped them with it. On the other hand, organizations having poor results (loss, decline in revenue and income) probably haven't developed an effective MS or use it to improve business. However, organizations would probably keep performing their business in the same way, operating with a certificate or without it. Both groups of organizations may still encounter a threat of downsizing the business in the future, but the ones previously successful will probably keep using their strengths and thus gain better results even if they lose their certificates. The advantages from their

2 In the year 2012 ISO certification in USA cost $3,000 for a micro company and up to $23,000 for a large company (QualityWorks, 2012). Now in Slovenia these costs can still be up to 4 times lower.

3 Costs for preparing a 250-person plant for a certification audit in USA were assessed to $26,000 in the year 2012 (The9000Store, 2012).

effective MS can't be lost over night, although abandoning the MS can be related to losing some important performance drivers over time. Hence, we can expect that successful organizations perform better or downsize later after losing a certificate. So our third hypotheses would be:

H3: Business performance of the organization after certificate cancellation is related to the previous business performance.

3 Reasons for cancelling management system certificates and their effects on business performance

Organizations lose certificates for some reason. The causes for losing certificates lie mostly within the certified organizations themselves. However, the decision about cancelling certificates can be taken by a certification body or by certified organization itself.

If an organization doesn't meet the requirements for keeping certificates (e.g. no internal audit and management review performed, no external audit carried out in a required period) the certification body should withdraw the certificates. This is one of the reasons for losing certificates when key MS activities are not performed regularly and in time.

Besides, organizations themselves can decide to quit certification for many reasons. These reasons are often related to barriers to effective implementation of the MS. The previous research (Magd, 2008) showed that the main three barriers are low top management commitment, lack of financial resources, insufficient training and education etc. (Magd, 2008). Consequently, the following three main reasons for quitting the certificates can be expected: low internal interest for maintaining the MS, cost-cutting (skipping costs of external audit and maintaining certificate) or change in organization's status, ownership or top management.

We can expect, that these reasons and decisions for quitting certification are often related to the benefit / cost ratio of such certification as perceived by an organization (Dearing, 2007; Martinez-Costa and Martinez-Lorete, 2007). As stated above, in general, more negative than positive effects on business performance are expected from losing the MS certificates. If the reason for giving up certification is low benefit / cost ratio (having more costs than benefits from certifying MS), general negative effects of cancelling the certificates shouldn't prevail over expected positive ones (for a certificate as a cost-maker would be removed). It means that in this case cancellation shouldn't cause noticeable negative effect on business performance (revenue and income decrease, negative income, business breakdown and closing of organization). Indeed, organizations often don't solve their cost problems by cost-cutting in certification area. In fact, in many cases a cost of certification is not the main cost of the implemented MS and not the real problem of the organization's business. In such cases low benefit / cost ratio of the MS is most likely related to improper and ineffective implementation of the MS or indicates overall business problems of the organization.

Still, there are some other possible reasons for quitting certification, where negative effects of such a decision (as explained above) can be expected, as well. The reasons can be related to barriers to effective implementation of the MS like low internal interest for MS, low management support, low (financial) resources, not enough skilled employees, organizational resistance to change etc. (Magd, 2008).

Low interest of organizations for certifying their MS can be explained by interpreting the certification process as a distinction element. In spite of the international significant growth in the number of ISO 9001 certificates issued (see introduction), some countries are already reaching a market saturation level regarding the number of ISO 9001 certified entities (Sampaio et al., 2009). When the number of certified organizations reaches a certain limit, certification loses its connotation and becomes less attractive for the remaining companies. The "saturation effect" can be reached in those countries which are attaining the so-called "maturity level" (i.e. the level in which no certification growth is registered) (Psomas and Fotopoulos, 2009).

Another reason why organizations quit certification of their MS may be their attitude toward certification. They see it more or less as a good business for certification bodies. With regard to effective audit of the standard Zeng et al. (2007) found that the main problems regarding certification were the lack of commitment from some certifying bodies, the excessive competition between certifying bodies and the offering of a total packaged service from consultancy to certification by certifying bodies (Psomas and Fotopoulos, 2009).

In addition, organizations lose their certificates because of change in their ownership and organizational changes (like acquisitions, reorganizations etc.), which cause closing of this organization.

Considering different possible reasons for cancelling certificates (mentioned above) in relation to business performance of an organization after cancellation we searched for some support from previous research. A similar relationship (between reasons or motives for certification and business performance) has been already proved (Llopis and Tari, 2003). By transferring it to the case of quitting certification, we expected similar relations. Therefore we supposed that a decline in business growth and in income after cancelling certificates would vary depending on the reason for cancellation. Hence we set the fourth hypotheses:

H4: A growth or decline in business performance of the organizations after cancellation of ISO certificates is related to the reasons for that decision.

4 Methodology of the empirical research

The empirical research was carried out as a survey studying a group of organizations in Slovenia that gave up certification in years 2009 and 2010. To limit the research all such clients of only one well-known certification body in Slovenia (having almost 40% market share) were investigated. The analysed period was limited to the last two years (2009 and 2010) when a significant increase in number of cancelled certificates in

Slovenia was noticed (see introduction). This way we investigated 108 organizations which all together cancelled 144 different certificates in these two years.

For the purpose of statistical analysis we grouped the cancelled certificates and the organizations (their owners) upon:

- placing organizations into groups of industries according to European classification NACE (SURS, 2011),
- organization size (BIZI.SI, 2011),
- reasons for cancellation of certificates (Slovenian certification bodies, 2011).

For each organization we gathered data about its business operating status and business performance in years 2008 to 2010. We searched for it in published balance sheets and income statements in publicly Retrieved financial databases (BIZI.SI, 2011; AJPES, 2011) and in annual reports of the organizations. For further statistical analysis (calculation of totals and shares) we classified organizations into groups according to their business results before and after cancelling certificates, especially by:

- positive or negative income (profit or loss) before cancelling certificates (in years 2008 or 2009) and after it (in the year 2010),
- growth or fall in income (and revenue),
- staying in business or closing the organization (till the end of 2010).

The hypothesis H1 to H4 were analytically proved through their development (in sections two and three), where some empirical support from former empirical research was referred to.

In accordance to the hypotheses H1 and H2 we assumed that the results of the survey undertaken in Slovenia would show a decline in business performance (presented in falling proportions of successful organizations or in rising proportions of bad performing and non-operating organizations). For the sample was large enough ($n > 30$) these hypotheses were tested by using one-proportion z-test. So we tested the proportions of unsuccessful organizations in the first and in the second year after cancellation of the certificates. In support of the hypotheses H3 a c^2-test was used for statistical test of relationships between business performance before and after cancellation of the certificates. Likewise, the relationships between the reasons for certificate cancellation and business performance (income and revenue growth, negative or positive income and survival of organizations) were tested using c^2-test in support to the hypothesis H4. All the hypotheses were tested including tests on two subsets of data.

The survey results are presented in tables and graphs in the following section. When appropriate, some data cells of the tables are shadowed to show prevailing situation within analysed group of organizations.

5 Results of the empirical research in Slovenia

5.1 Which organizations quit certifying their management systems

As presented in Table 1, we found 108 organizations having their certificates cancelled in years 2009 (48 organizations) and 2010 (60 organizations). In these two years 144 certificates were cancelled: 71 of them in the year 2009 and 73 of them in the year 2010. The results show that the number of cancelled certificates in this survey was similar in both years, though the number of organizations with cancelled certificates increased from the year 2009 to 2010.

Cancelled certificates mostly belonged to the quality management standard ISO 9001 (117 certificates or more than 80% of them all) (Figure 1). In the second place, there were 15 certificates according to the environment management standard ISO 14001. There were still 12 cancelled certificates of other systems like OHSAS (health MS), ISO 13845 (medical devices QMS), QWeb (quality in web service) and some certified national systems. Mostly, organizations had only 1 certificate cancelled. However, there were 7 organizations with 2 different certificates and 1 with 3 different certificates. There was also 1 organization having 12 subsidiaries, each having an ISO 9001 certificate.

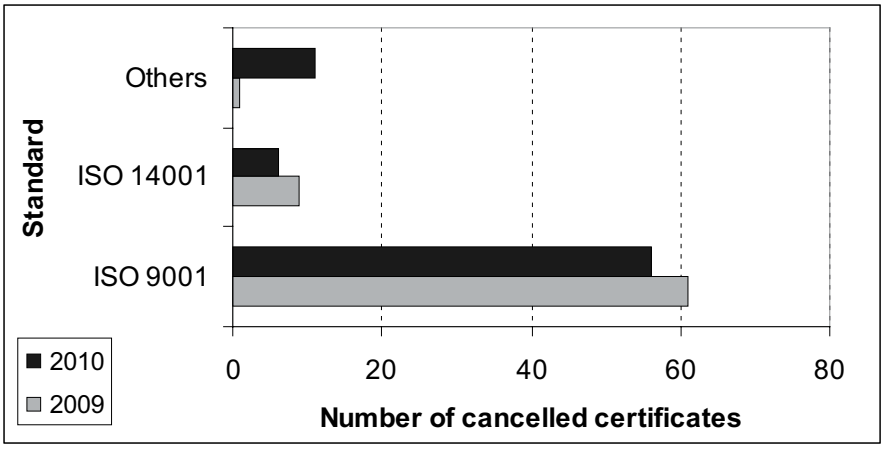


Figure 1: Number of cancelled certificates in years 2009 and 2010

Table 1: Number of organizations and their cancelled certificates in years 2009 and 2010

	Number of organizations			Number of cancelled certificates								
				ISO 9001		ISO 14001		Others		Total		TOTAL
Industry (NACE classification)	2009	2010	TOTAL	2009	2010	2009	2010	2009	2010	2009	2010	*both years*
C - MANUFACTURING	18	22	**40**	20	22	4	6	1	3	25	31	**56**
E - WATER SUPPLY; SEWERAGE, WASTE MANAGEMENT AND REMEDIATION ACTIVITIES	1		**1**	1		1				2		**2**
F - CONSTRUCTION	3	8	**11**	3	8	1				4	8	**12**
G - WHOLESALE AND RETAIL TRADE; REPAIR OF MOTOR VEHICLES AND MOTORCYCLES	4	6	**10**	4	7				1	4	8	**12**
H - TRANSPORTATION AND STORAGE	3	1	**4**	3	1	1				4	1	**5**
I - ACCOMMODATION AND FOOD SERVICE ACTIVITIES	2		**2**	2						2		**2**
J - INFORMATION AND COMMUNICATION	2	3	**5**	2	4					2	4	**6**
K - FINANCIAL AND INSURANCE ACTIVITIES	4	1	**5**	15	1					15	1	**16**
L - REAL ESTATE ACTIVITIES	1	1	**2**	1	1					1	1	**2**
M - PROFESSIONAL, SCIENTIFIC AND TECHNICAL ACTIVITIES	3	8	**11**	3	7				1	3	8	**11**
N - ADMINISTRATIVE AND SUPPORT SERVICE ACTIVITIES	4	1	**5**	4	1	2				6	1	**7**
O - PUBLIC ADMINISTRATION AND DEFENCE; COMPULSORY SOCIAL SECURITY	2	1	**3**	2	1					2	1	**3**
P - EDUCATION		6	**6**		2				5		7	**7**
Q - HUMAN HEALTH AND SOCIAL WORK ACTIVITIES		1	**1**		1						1	**1**
R - ARTS, ENTERTAINMENT AND RECREATION	1		**1**	1						1		**1**
S - OTHER SERVICE ACTIVITIES		1	**1**						1		1	**1**
Total	**48**	**60**	**108**	61	56	9	6	1	11	**71**	**73**	**144**
Organization size												
Micro	17	21	**38**	17	22		1		2	17	25	**42**
Small	10	18	**28**	11	16	3	1		3	14	20	**34**
Middle	3	12	**15**	3	10	1	1		5	4	16	**20**
Large	3	7	**10**	14	6		3	1	1	15	10	**25**
Size not known	15	2	**17**	16	2	5				21	2	**23**
Total	**48**	**60**	**108**	61	56	9	6	1	11	**71**	**73**	**144**

As seen form Table 1 quitting certification was more frequent in some industries. To notice it the cells in the table are shadowed where there were 5 or more organizations or cancelled certificates indicated in an industry. In both years the majority of the cancellations referred to manufacturing industry (56 organizations or 37%). In the year 2010 there was a noticeable increase in cancellations in construction, wholesale and retail, professional, scientific and technical activities and in education. In this period some of these industries (like construction) came under strong pressure because of global economic crises which appeared at the end of 2008. It strongly affected the business in these organizations, so it could affect their MS certification as well.

The data shows (Table 1) that organizations of all sizes were involved in quitting certificates. As expected, micro (having up to 10 employees) and small (having 11 to 50 employees) prevailed in both years. So, there were 38 micro organizations (or 35%) and 28 small ones (or 26%) involved in this period (2009 and 2010).

5.2 Reasons for quitting certification

It is noticeable from Table 2 that organizations claimed one of the following reasons which are consistent to those expected from the literature review (see section three):

- benefit/cost ratio,
- economic crises,
- low interest for certification,
- external audit not performed,
- organizational changes.

These reasons are related to activities and decisions within organizations. In general, organizations deciding upon the first four reasons show low internal interest for certification and potential financial problems. However, organizational changes like closing the organization, changing its legal status etc. refer more or less to decisions of the organization owners.

On the other hand a certification body documented one of the following reasons for withdrawal of certificates:

- cancellation by certification body (CB),
- expiration of certificate,
- temporary cancellation.

Where temporary cancellation is the case, often a final cancellation is to be expected.

Among the reasons for cancellation by CB (in 25 organizations which present 23%) prevailed. The number of cancellations because of the organizational changes was high as well (18 organizations or 17%). In the year 2010 economic crises appeared as the most frequently stated internal reason for cancellations (in 15 organizations which represent 25% of the organizations losing certificates in the year 2010 or 14% of them all).

Table 2: Reasons for cancelled certificates in years 2009 and 2010

REASONS FOR CANCELLATION / YEAR	Number of organizations with cancelled certificates								
	Benefit/ cost ratio	Economic crises	Low interest for certification	Audit not performed	Organi-zational changes	Cancellation by CB	Expiration of certificate	Temporary cancellation	TOTAL
2009	3		5		11	19	2	8	**48**
2010	8	15	8	11	7	6	4	1	**60**
Total	**11**	**15**	**13**	**11**	**18**	**25**	**6**	**9**	**108**
Industry (NACE classification)									
C - MANUFACTURING	2	3	6	5	7	1	3	4	**40**
E - WATER SUPPLY; SEWERAGE, WASTE MANAGEMENT AND REMEDIATION ACTIVITIES						1			**1**
F - CONSTRUCTION	2	2	2	2	2		1		**11**
G - WHOLESALE AND RETAIL TRADE; REPAIR OF MOTOR VEHICLES AND MOTORCYCLES		1	1		2	3		3	**10**
H - TRANSPORTATION AND STORAGE		1				3			**4**
I - ACCOMMODATION AND FOOD SERVICE ACTIVITIES	1					1			**2**
J - INFORMATION AND COMMUNICATION			1	1		1	1	1	**5**
K - FINANCIAL AND INSURANCE ACTIVITIES	1				2	2			**5**
L - REAL ESTATE ACTIVITIES		1				1			**2**
M - PROFESSIONAL, SCIENTIFIC AND TECHNICAL ACTIVITIES	1	3	2	1	1	3			**11**
N - ADMINISTRATIVE AND SUPPORT SERVICE ACTIVITIES				1	3			1	**5**
O - PUBLIC ADMINISTRATION AND DEFENCE; COMPULSORY SOCIAL SECURITY	2		1						**3**
P - EDUCATION		4		1			1		**6**
Q - HUMAN HEALTH AND SOCIAL WORK ACTIVITIES					1				**1**
R - ARTS, ENTERTAINMENT AND RECREATION	1								**1**
S - OTHER SERVICE ACTIVITIES	1								**1**
Total	**11**	**15**	**13**	**11**	**18**	**25**	**6**	**9**	**108**
Organization size									
Micro	6	7	3	5	2	7	2	6	**38**
Small	2	5	7	3	3	3	2	3	**28**
Middle	1	2	1	3	4	3	1		**15**
Large		1	2		3	3	1		**10**
Size not known	2				6	9			**17**
Total	**11**	**15**	**13**	**11**	**18**	**25**	**6**	**9**	**108**
Total - group of reasons	**50**				**18**	**40**			**108**
	LOW INTEREST IN ORGANIZATION				OWNERS / MANAGE-MENT DECISION	ORGANIZATION'S PERFORMANCE AND EXISTENCE PROBLEMS			

5.3 Effects of quitting certification on future business performance

Table 3 and 4 show survey results about business performance of the organizations which lost certificates in years 2009 and 2010. Tables 5 to 7 show summary from the survey which serves as a basis for testing our hypotheses.

Support for hypothesis H1: "*Cancellation of ISO certificates is related to a decline in business performance of the organizations*".

The data in table 5 shows that only 41.7% of the organizations were growing their income one year after cancelling their certificates (compared to the income before cancellation). In the group of organizations which lost certificates a year earlier this percentage was only 22.9% after two year period. Concerning both, growth in income and in revenue at the same time, only 14 organizations (or 23% of all of the 2010 group) met that criterion after one year and 11 organizations met them (or 8% of all of the 2009 group) after two years.

On the other hand 58% of the 2010 group of organizations still operated with profit one year after losing certificates, while this percentage declined to 45.8% in the 2009 group which operated two years without certificates.

Besides, after one year 30% of the companies decreased their income and 16.7% of them encountered survival problems like blocked bank accounts, liquidation and bankruptcy. After two years already 35.4% of the companies decreased their income and 39.6% of them encountered survival problems. Altogether there were documented 46.7% of organiza-

Table 3: Business performance of the organizations with cancelled certificates in the year 2009 – situation two years after cancellation

CANCELLED CERTIFICATES IN YEAR 2009	Nr. of organi-zations	Organization performs normally in year 2010.							In the year 2010 performs no business more or. its performance is threatened.			
		Nr. of organi-zations	Growth / fall of income			income in year 2010			Nr. of organi-zations	Blocked bank account	Liqui-dation	Bank-ruptcy
REASONS FOR GIVING UP CERTIFICATION:			Growth	Fall	Data missing	Profit	Loss	Data missing				
Benefit/cost ratio	**3**	**3**	1	1	1	1	1	1				
Low interest for certification	**5**	**5**	3	2		4	1					
Organizational changes	**11**	**4**	2	2		4			**7**		4	3
Cancellation by CB	**19**	**8**	3	5		6	1	1	**11**	1	6	4
Expiration of certificate	**2**	**2**	1	1		2						
Temporary cancellation	**8**	**7**	1	6		5	2		**1**			1
TOTAL	**48**	**29**	11	17	1	22	5	2	**19**	**1**	**10**	**8**
INCOME IN YEAR 2008												
Profit	**31**	**25**	9	16		20	5		**6**	1	4	1
Loss	**8**	**3**	2	1		2		1	**5**			5
Data missing	**9**	**1**			1			1	**8**		6	2
TOTAL	**48**	**29**	11	17	1	22	5	2	**19**	1	10	8
Percentage of organizations	**100.0%**	**60.4%**	22.9%	35.4%	2.1%	45.8%	10.4%	4.2%	**39.6%**	2.1%	20.8%	16.7%

Table 4: Business performance of the organizations with cancelled certificates in the year 2010 – situation one year after cancellation

CANCELLED CERTIFICATES IN YEAR 2010	Nr. of organi-zations	Organization performs normally in year 2010.							In the year 2010 performs no business more or. its performance is threatened.				Data about organi-zation is missing
		Nr. of organi-zations	Growth / fall of income			income in year 2010			Nr. of organi-zations	Blocked bank account	Liqui-dation	Bank-ruptcy	
REASONS FOR GIVING UP CERTIFICATION:			Growth	Fall	Data missing	Profit	Loss	Data missing					
Benefit/cost ratio	**8**	**6**	2	2	2	3	1	2	**1**			1	**1**
Economic crises	**15**	**14**	7	6	1	11	1	2	**1**	1			
Low interest for certification	**8**	**7**	2	3	2	5		2	**1**		1		
Audit not performed	**11**	**9**	3	5	1	7	2		**2**			2	
Organizational changes	**7**	**4**	4			3	1		**3**		3		
Cancellation by CB	**6**	**5**	4	1		4	1		**1**	1			
Expiration of certificate	**4**	**4**	3	1		2	2						
Temporary cancellation	**1**	**0**							**1**	1			
TOTAL	**60**	**49**	25	18	6	35	8	6	**10**	3	4	3	**1**
INCOME IN YEAR 2009													
Profit	**38**	**34**	18	16		31	3		**4**	1	2	1	
Loss	**14**	**9**	7	2		4	5		**5**	1	2	2	
Data missing	**8**	**6**			6			6	**1**	1			**1**
TOTAL	**60**	**49**	25	18	6	35	8	6	**10**	3	4	3	**1**
Percentage of organizations	**100.0%**	**81.7%**	41.7%	30.0%	10.0%	58.3%	13.3%	10.0%	**16.7%**	5.0%	6.7%	5.0%	**1.7%**

Table 5: Change in business performance over years after cancellation of the certificates – survey summary

CANCELLED CERTIFICATES IN YEAR	Nr. of organi-zations	Organization performs normally in year 2010.							In the year 2010 performs no business more or. its performance is threatened.				Data about organi-zation is missing
		Nr. of organi-zations	Growth / fall of income			income in year 2010			Nr. of organi-zations	Blocked bank account	Liqui-dation	Bank-ruptcy	
NUMBER OF ORGANIZATIONS			Growth	Fall	Data missing	Profit	Loss	Data missing					
2010 => performance after 1 year	**60**	**49**	25	18	6	35	8	6	**10**	3	4	3	**1**
2009 => performance after 2	**48**	**29**	11	17	1	22	5	2	**19**	1	10	8	
PERCENTAGE OF ORGANIZATIONS													
2010 => performance after 1 year	**100.0%**	**81.7%**	41.7%	30.0%	10.0%	58.3%	13.3%	10.0%	**16.7%**	5.0%	6.7%	5.0%	**1.7%**
2009 => performance after 2 years	**100.0%**	**60.4%**	22.9%	35.4%	2.1%	45.8%	10.4%	4.2%	**39.6%**	2.1%	20.8%	16.7%	

Table 6: Results of testing the proportion of bad-performing and non- performing organizations one year after cancellation of the certificates

Hypothesis about survey results		Statistical test								Rejecting	Conclusion
Test	Assumption	α	n	Π_0	p	SE(p)	z	z_α	$P(z = z_\alpha)$	the null hypothesis	Proven relationships
H1-1	The percentage of organizations showing decrease in income one year after cancellation of ISO certificates is significantly grater than 21%.	0.050	60	21%	30.0%	0.0526	1.7116	1.6449	0.0435	$H1\text{-}1_0$ REJECTED	Decrease in income after certificate cancellation in the first year.
H1-2	The percentage of failed organizations one year after cancellation of ISO certificates is significantly grater than 10%.	0.050	60	10%	16.7%	0.0387	1.7299	1.6449	0.0418	$H1\text{-}2_0$ REJECTED	certificate cancellation - business fail in the first year

tions with deteriorated business after one year and already 75 % of such cases after two years.

Two auxiliary hypotheses were developed to test the hypotheses H1 using a z-test:

- H1-1 for testing the proportion of organizations demonstrating a decrease in their income and
- H1-2 for testing the proportion of failed organizations.

Table 6 presents the results of testing H1 null hypotheses which show no significant differences in the proportion of such unsuccessful organizations between the sample and the whole population. So we can reject at 5% level of significance both the H1 null hypotheses and accept hypotheses H1-1 and H1-2. Thus hypothesis H1 can be accepted. Therefore we can conclude that there is a significant relationship in cancellation of ISO certificates and decline in business performance. So we can expect 10% of such organizations to decrease their income and 21% of them to quit their business in one year after cancellation of the certificates.

Two auxiliary hypotheses were developed as well:

- H1-1 for testing relationship between reasons for quitting certification and future growth of income on the basis of the data in Table 9 and
- H1-2 for testing relationship between reasons for quitting certification and future income and survival of the organizations on the basis of the data in Table 10.

Support for hypothesis H2: *A decline in business performance of the organizations is related to the time passed after cancellation of their ISO certificates.*

We can see from the data presented in Table 5 and from the explanation to the hypothesis H1 that the percentage of organizations that show decline in business performance almost doubled in the 2009 group of organizations comparing to the 2010 group.

To get some support to the hypotheses H2 similar tests as for hypothesis H1 were carried out on the sample of organizations where a two-year period passed after cancellation of the certificates (Table 7). It proved the same significant relationship with higher proportions of unsuccessful organizations two years after cancellation of the certificates than in the first year after it. According to the test results we can expect 28% of organizations loosing certificates to decrease their income and 25% of them to quit their business in two years after cancellation of the certificates. These two sequential tests in Tables 6 and 7 can lead to the conclusion that the business performance of the organizations is related to the time passed after cancellation of the certificates. Thus they give some support to the hypotheses H2.

Support for hypothesis H3: *Business performance of the organization after cancellation of the certificates is related to the previous business performance.*

Tables 8 and 9 and graphs in Figures 2 and 3 show that majority (51 or 74% of 69 such organizations) of the organizations which operated with profit before losing certificate kept their profit after one or two years. However, 42 (= 32 + 10) or 61% of these organizations decreased their income or didn't survive in this period.

Table 7: Results of testing the proportion of bad-performing and non- performing organizations two years after cancellation of the certificates

Hypothesis about survey results		Statistical test								Rejecting	Conclusion
Test	Assumption	α	m	Π_0	p	SE(p)	z	z_α	$P(z = z_\alpha)$	the null hypothesis	Proven relationships
H2-1	The percentage of organizations showing decrease in income two years after cancellation of ISO certificates is significantly grater than 25%.	0.050	48	25%	35.4%	0.0625	1.6640	1.6449	0.0481	$H2\text{-}1_0$ REJECTED	certificate cancellation - increased decrease in income in two years
H2-2	The percentage of failed organizations two years after cancellation of ISO certificates is significantly grater than 28%.	0.050	48	28%	39.6%	0.0648	1.7899	1.6449	0.0367	$H2\text{-}2_0$ REJECTED	certificate cancellation - increased business fail in two years

Table 8: Number of organizations showing income growth or fall after cancellation of the certificates in relation to previous profit or loss

	Nr. of organizations with cancelled certificates				
INCOME BEFORE CERTIFICATE CANCELATION	Growth	Fall	No performance	Data missing	Total
Profit	27	32	10		**69**
Loss	9	3	10		**22**
Data missing			9	8	**17**
Total	**36**	**35**	**29**	**8**	**108**

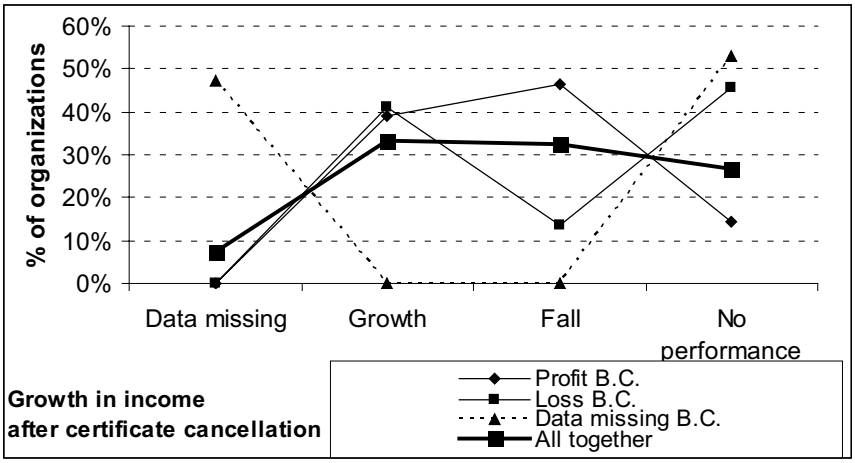


Figure 2: Percentage of organizations showing income growth or fall after cancellation of the certificates in relation to previous profit or loss

Table 9: Number of organizations showing profit, loss or no business performance now (in the end of the year 2010) in relation to profit or loss before cancellation of the certificates

	Nr. of organizations with cancelled certificates				
INCOME BEFORE CERTIFICATE CANCELATION	Profit	Loss	No performance	Data missing	Total
Profit	51	8	10		**69**
Loss	6	5	10	1	**22**
Data missing			9	8	**17**
Total	**57**	**13**	**29**	**9**	**108**

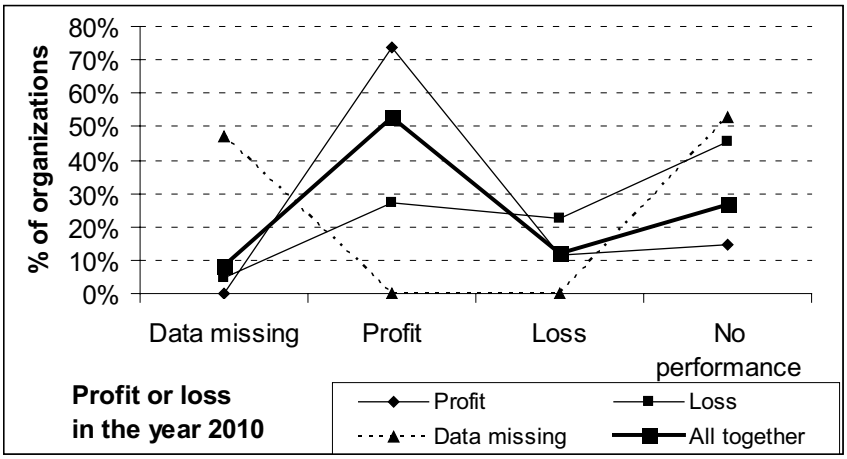


Figure 3: Percentage of organizations showing profit, loss or no business performance now (at the end of the year 2010) in relation to profit or loss before cancellation of the certificates

In the group of the organizations which operated with loss before losing certificate there were 9 (or 41% of 22 such organizations) that indicated growth in their income, but only 6 (or 27% of 22 such organizations) gained profit. The remaining 13 companies of this group (= 3 + 10 or 49% of them all) operated with decline in income or didn't survive in this period.

Hypothesis H3 was tested by testing relationships between two sets of data. Therefore two auxiliary hypotheses were developed:

- H3-1 for testing relationship between income before certificate cancellation and future growth of income on the basis of the data in Table 8 and
- H3-2 for testing relationship between income before certificate cancellation and future income and survival of the organizations on the basis of the data in Table 9.

We tested the differences in dynamics and level of business performance between the two groups of organizations (previously profitable and not profitable ones) using a c^2-test. Table 10 presents the results of testing the H3 null hypotheses which show no significant differences between the analysed groups. So we can reject at 0.5% level of significance both the H3 null hypotheses and accept the hypotheses H3-1 and H3-2. Thus the hypothesis H3 can be accepted.

5.4 Future business performance in relation to reasons for quitting

Support for hypothesis H4: *A growth or decline in business performance of the organizations after cancellation of ISO certificates is related to the reasons for that decision.*

Tables 11 and 12 and graphs in Figures 4 and 5 show that:

- 36% to 47% of the organizations (=50% or more organizations with Retrieved performance data) quitting certification for the first three reasons ("benefit/cost ratio", "economic crises" or "low interest for certification") experienced a decrease in income or even didn't survive, while 36% to 73% of them (=57% to 85% of the ones with Retrieved performance data) operated with a profit. Similar situation appeared in case of the reason "expiration of certificate".
- If "audit not performed" was the reason, 63% of the organizations (= 70% of the ones with Retrieved performance data) showed a decrease in income or even didn't

Table 10: Results of testing the dependence of business performance after cancellation of the certificates in relation to previous profit or loss

Hypothesis about survey results		Statistical test				Rejecting	Conclusion
Test	Assumption	α	m	χ^2	P	the null hypothesis	Proven relationships
H3-1	There is a significant relationship between positive or negative income (profit or loss) before cancellation of ISO certificates and income growth in the future.	0.005	2	72.6904	0.0000	H3-1_0 REJECTED	Income before certificate cancellation - future growth of income
H3-2	There is a significant relationship between positive or negative income (profit or loss) before cancellation of ISO certificates and future income and survival.	0.005	2	69.4616	0.0000	H3-2_0 REJECTED	Income before certificate cancellation - future income and survival

Table 11: Number of organizations showing income growth or fall after cancellation of the certificates in relation to reasons for quitting them

	Nr. of organizations with cancelled certificates				
REASONS FOR GIVING UP CERTIFICATION (2009 and 2010):	Growth	Fall	No performance	Data missing	Total
Benefit/cost ratio	3	3	1	4	**11**
Economic crises	7	6	1	1	**15**
Low interest for certification	5	5	1	2	**13**
Audit not performed	3	5	2	1	**11**
Organizational changes	6	2	10		**18**
Cancellation by CB	7	6	12		**25**
Expiration of certificate	4	2	0		**6**
Temporary cancellation	1	6	2		**9**
Total	**36**	**35**	**29**	**8**	**108**

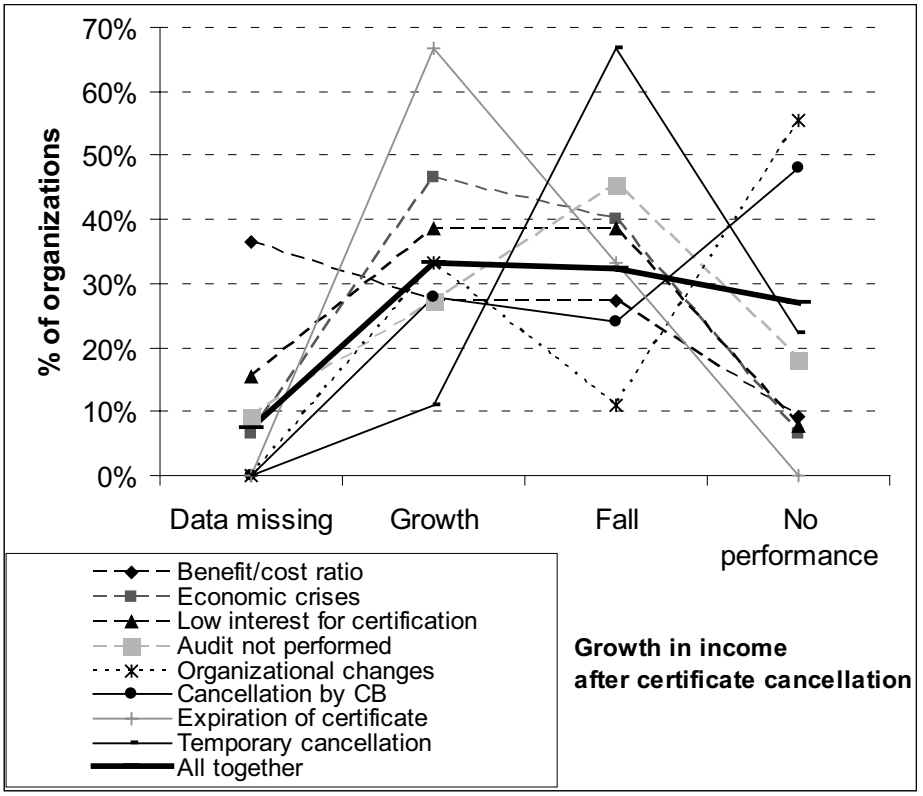


Figure 4: Percentage of organizations showing income growth or fall after cancellation of the certificates in relation to reasons for quitting them

survive, while the same percentage of them still operated with a profit.

- The reasons "organizational changes" and "cancelled by CB" gave worse results, while 48% to 56% of the organizations in this group quitted their business and 11% to 24% of them identified decrease in income. So altogether 66% to 72% of the organizations showed decrease in business performance or business fail. On the other hand, about 40% of them still operated with a profit.
- The worst results appeared at the reason "temporary cancellation". In this case 89% of the organizations realized decrease in income or they even didn't survive. However 56% of them still realized a profit.

The hypothesis H4 was tested in the same way as the hypothesis H3. Two auxiliary hypotheses were developed as well:

- H4-1 for testing relationship between reasons for quitting certification and future growth of income on the basis of the data in Table 11 and
- H4-2 for testing relationship between reasons for quitting certification and future income and survival of the organizations on the basis of the data in Table 12.

The results of testing the H4 null hypotheses using the c^2-tests are shown in Table 13. They show no significant differences in dynamics and level of business performance among the 8 analysed groups of organizations. So we can reject at 0.5% level of significance both the H4 null hypotheses and accept the hypotheses H4-1 and H4-2. Thus the hypothesis H4 can be accepted.

6 Discussion

The results of our survey are consistent with the expectations resulting from the literature review and former research explained in the first sections (Psomas and Fotopoulos, 2009). Although almost a half of all the companies in our survey (50 companies or 46% of them all) claimed some internal reasons for quitting certification linked to high costs and low expected benefits of the certificates. This is consistent with the findings of some other authors (Singels et al., 2001; Martinez-Costa and Martinez-Lorete, 2007) who didn't find the ISO certificates benefitial to the business preformance of the organizations. Nevertheless, these 50 analysed organizations didn't improve their business performance after giving up certification which should have been considered as a burden. On the contrary, only 18 of them (= 36% of this group of 50 organizations) incerased their income, all the others indecated a business performance decrease or even fail. Our research can't give an answer yet if loosing a certificate was one of major factors for these declines. However, considering authors who found a significant difference in business performance of certified and non-certified organizations (Corbet et al., 2002; Alič, 2003) and authors claiming that losing ISO 9001

Table 12: Number of organizations showing profit, loss or no business performance now (at the end of the year 2010) in relation to reasons for quitting the certificates

	Nr. of organizations with cancelled certificates				
REASONS FOR GIVING UP CERTIFICATION (2009 and 2010):	Profit	Loss	No performance	Data missing	Total
Benefit/cost ratio	4	2	1	4	**11**
Economic crises	11	1	1	2	**15**
Low interest for certification	9	1	1	2	**13**
Audit not performed	7	2	2		**11**
Organizational changes	7	1	10		**18**
Cancellation by CB	10	2	12	1	**25**
Expiration of certificate	4	2	0		**6**
Temporary cancellation	5	2	2		**9**
Total	**57**	**13**	**29**	**9**	**108**

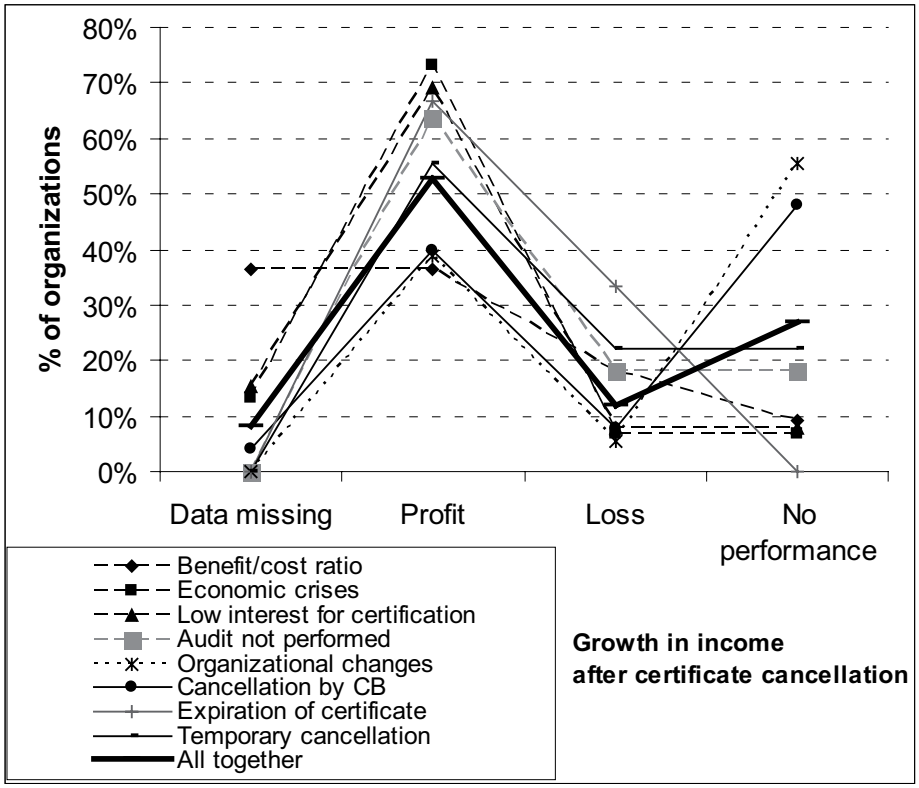


Figure 5: Percentage of organizations showing profit, loss or no business performance now (at the end of the year 2010) in relation to reasons for quitting the certificates

Table 13: Results of testing the dependence of business performance after cancellation of the certificates in relation to the reasons for quitting certification

Hypothesis about survey results		Statistical test				Rejecting	Conclusion
Test	Assumption	α	m	χ^2	P	the null hypothesis	Proven relationships
H4-1	There is a significant relationship between reasons for cancellation of ISO certificates and income growth in the future.	0.005	21	47.0391	0.0009	H4-1_0 REJECTED	Reasons for certificate cancellation - future growth of income
H4-2	There is a significant relationship between reasons for cancellation of ISO certificates and positive or negative income (profit or loss) or survival of the organization in the future.	0.005	21	43.1889	0.0030	H4-2_0 REJECTED	Reasons for certificate cancellation - future income and survival

certification can be worse than not achieving it at all (Joubert, 1998) can partly explain our results. We should emphasise that our survey analysed organizations in Slovenia in a period of an increasing economic crisis. We haven't found any previous research on the impact of a certified MS on performance and survival of an organization in case of an economic crisis. So it is hard to comment our results regarding it.

To correctly interpret the survey results some limitations of this research should be explained:

- It is important to take an appropriate and long enough period to analyse the trends in business performance of organizations after cancellations of their certificates. Just two years is a rather short period for that purpose. As a matter of fact, we didn't and couldn't take a longer period, because economic situation changed a lot after the year 2008. Indeed, we wanted to get an actual picture of the analysed phenomenon.
- The data doesn't cover all the cancellations of certificates in Slovenia since the data of only one certification body was used as a source. This could have influenced the conclusions of the survey if the surveyed group wasn't big enough. We believe that the group of 108 analysed organizations was big enough to generalise conclusions. Of course, it would be interesting to expand the research on more certification bodies.
- The data for the organizations which failed in business and don't exist any more were not Retrieved in public databases. Getting this data probably wouldn't affect conclusions of our survey, but it would help developing a better picture over the situation.
- We wondered whether organizations understood and identified the right reasons for quitting certification. It is not easy to find out the real reason for giving up certification and the background for it when they are not correctly indicated from their source. For instance, it is a little bit surprising that some reasons like economic crisis didn't appear in the year 2009 at all. In addition the some reasons for losing certificates for (like "benefit/cost ratio") have ambiguous effects on business performance. If organizations see more costs than benefits of a certificate, quitting certification shouldn't result in decrease of business performance. Opposite results in some cases might signal that quitting certification is one of cost-cutting when an organization is in deep troubles and keeping certificates probably wouldn't affect the trend of downsizing the business. Of course, if this is the case, organizations probably aren't willing to tell the real reason for quitting certification.

Some further research needs to be done to clarify the above mentioned opened questions from this survey.

7 Conclusion

The use of ISO standards and development of management systems on that basis is still increasing in the world. ISO 9001 is the most widely used standard among them. The literature review and previous empirical research show that a quality management system if properly implemented provides several benefits and contributes to good business performance of the companies. Companies mostly decide to certify their management systems. A certificate is a formal proof of performing a standard, but at the same time this procedure takes some extra efforts and money. This is one of the reasons which may lead a company to decision about quitting certification.

The results of our survey in Slovenia are not far away from our expectations based on the theory and former research. All four hypotheses were accepted. As a result of the proved hypothesis H1 a significant decline in business performance was identified after quitting certification. It meant a significant decline in income and revenue in 10% of the organizations in the first year already and 21% of them in the second year. A percentage of the organizations in our pattern operating at a profit decreased as well from 63.9% before cancellation of the certificates to 58.3% in the first year and further to 45.8% in the second year. So, two years after cancelling certificates only 8% of the organizations still present growth in their income and revenue, besides almost 40% of them collapsed or encountered survival problems like blocked bank accounts, liquidation and bankruptcy. Testing the hypothesis H2 showed that this decline in business performance was significantly related to the time passed after quitting certificates. Next, a significant relationship between the business performance before and after cancellation was proved by testing the hypothesis H3. Comparing previously profitable or non-profitable organizations there were only 39% to 41% of them that increased their income after cancellation of the certificates in both groups. However, a 3-times higher proportion of failed organizations (= 45% of previously non-profitable organizations) was found among the organizations that previously operated at a loss. According to the proved hypothesis H4 the decline in business performance differed in relation to the reason for quitting as well. Thus, organizational changes (in 35% of all the organizations loosing certificates) and cancellation of certificates by certification bodies (in 41% of these organizations) were the most common reasons that led to the failure of these organizations.

Therefore a question appears about the real causes for giving up certification. We still don't know to what extent cancelled certificates contributed to a decline in business performance and to business fail. It is unlikely that only these certificates influenced their business so much. More likely many of these organizations were in trouble before taking decision to give up certification. If this was the case cancelled certificates could be considered as a negative signal – an early external signal of a failing business. To confirm this assumption some further research should be performed investigating causes and a background for quitting certification.

Abbreviations:
QMS – Quality Management System;
MS – Management System;
CB – Certification Body

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