

# Effects of application of standard ISO in profitability and revenues of enterprise in Pollog region- Republic of Macedonia

PhD candidate Argjina Karemani; PhD candidate Rametulla Ferati; PhD Hasim Deari; PhD candidate Adela Osmani

## Abstract

The quality standard ISO 9001 is a set of international standards which helps management to establish and maintain quality enterprise system. In connection with the benefits of the application of this standard we have numerous empirical papers which are divided into giving conclusions, some papers show that the application of ISO 9001 positively affect sales and profitability of enterprises, while some other empirical studies show the opposite. Based on empirical data we will try to point out how the application of this standard affects the sales and profitability of small and medium enterprises in Pollog region. The methodology used in this paper is independent, the data that we will use in the paper are obtained from the balance sheets of enterprises and the survey of 100 SMEs received as a sample. With the help of regression analysis we will measure the impact of the application of ISO 9001 in revenues and profitability of enterprises. Preliminary results indicate that there is a positive correlation between these variables, companies that have applied this standard have increased their sales and profitability, companies that have not applied have a reduction in revenues and profitability.

**Keywords:** ISO 9001, profitability, sales, quality

## INTRODUCTION

Nowadays, in the period of globalization, pressure on enterprises has increased significantly from customers and competition companies. Pressure in enterprises is different; enterprises need constantly to invent new products, renew existing products and are forced constantly to improve the quality of existing goods and services. There is great need for investment in infrastructure, standardization of production processes and enterprise management in order enterprises to be successful in business and to reduce technical barriers of trade. Looking at the different pressures faced by enterprises, international organization for standardization (ISO) aims to encourage and facilitate the international exchange of goods and services by cooperating in various fields intellectual, technological and economic research activities. Quality management enables companies to be certified in order to decrease their costs. ISO 9000 standards are standards that allow us to practice better quality and more efficient management of the company to the highest achievements in the business sphere. Today in many countries, most enterprises have applied ISO 9000 or use it as a basis for national certification standards. Willingness to implement ISO 9000 certification may be associated with improved quality expectations and that these factors are

perceived as important to competitive success and competitive advantage (Escanciano et al, 2001; Withers and Ebrahimpour, 2000). Organizations are striving to achieve customer satisfaction through a special emphasis on quality products and services. This is because the competition is dependent on superior offer quality products and services to customers. As a result, organizations have followed a large number of quality initiatives, such as Total Quality Management (TQM), Just-In-Time (JIT), Shing Price, Deming Price and ISO 9000. However, the most popular philosopher are philosopher for quality ISO 9000 and TQM. ISO 9000 certification is applied in a worldwide and in all industry sectors. Nowadays for the enterprises, certification to ISO 900 is not only a need but also a general requirement for good management of a business (Yann, 1998). ISO 9000 standards are a set of written instructions that constitute a specification of quality management system that can be applied to any organization regardless of product or service offered. ISO has developed more than 18,000 international standards and nearly each year publishes 1,100 new standards. "Certification Survey of ISO 2009", reveals that there are more than 1.2 million ISO 9001 certificates in the world in more than 176 countries. Approximately 50% of businesses are certified or in the process of implementing the ISO 9001:2008 standard. Top 10 countries that have implemented ISO 9001 in 2009 were China, Italy, Japan, Spain, the Russian Federation, Germany, Great Britain,

India, the U.S. and Korea. In the Republic of Macedonia in recent years there is a growing trend in the implementation of quality standards, all as a result of globalization and the desire of companies to penetrate foreign markets. This paper will examine how it impacts the application of ISO 9001 in revenues and profitability of SMEs in the region of the Republic of Macedonia Pollog. The paper is divided into three parts, the first part we have the introduction, the second part deals with the literature review and the third part has to do with empirical analysis and interpretation of results.

### Literature review

Studies have been conducted both worldwide and in Republic of Macedonia to investigate how impact ISO 9000 certification on profitability and sales. Some of them concluded that it leads to improved internal processes, which boost up productivity and lower costs. Others found that as customers increasingly require quality products, ISO 9000 would help maintain or increase a firm's market share. However, others claim that certification does not lead to any improvements

Although companies seek ISO 9000 certification for external reasons, this leads to internal improvement (**Casadesu's et al., 2000**). This is because external motivations stimulate quality awareness among employees. It is claimed that when companies become certified based on internal reasons, they derive benefits on a more global dimension. Firms with internal motivations encounter fewer difficulties in implementing ISO 9000. On the other hand, when companies implement ISO 9000 for external motivations, improvements obtained are mainly of an external nature. (**Gotzamani & Tsiotras, 2002**) stated that companies seeking ISO 9000 certification mainly based on external motivations will achieve mostly external benefits, while those that seek certification based on true quality improvement will get benefits mainly in terms of internal operations improvement.

Some authors believe that internal motives are more important than external ones. A survey by (**Gotzamani & Tsiotras, 2002**) found that Greek companies seek ISO 9000 certification mainly to improve internal operations. (**Arauz & Suzuki, 2004**), in a study in Japan, revealed that internal motivation was the significant factor in terms of cost and quality. On the other hand, (**Raynor & Porter, 1991**) have found that the key reason for certification in the U.K. was the perception of the customer. In a study in U.K., (**Blackham, 1992**) and (**Tennant, 1993**) found that tender eligibility, customer satisfaction and marketing advantages were more important than the internal forces.

ISO quality as a management method, as well as its integration with the business administration theory, as presented by (**Dean Jr. & Bowen, 1994**), emerged in this same issue the today's classic article of (**Anderson, Rungtusanatham & Schroeder, 1994**), where the authors articulate a theory of business management based on the Deming's philosophy by developing a quality management framework using rigorous methodology. (**Reeves & Bednar, 1994**) discuss the evolution of the definition of quality, the strengths and the weaknesses of each one of them, and concluded that multiple definitions should be adopted in order to capture the complexity and the richness of the construct.

(**Zaramdini, 2006**), selected 19 common reasons that could motivate United Arab Emirates (UAE) companies in seeking ISO 9001:2000 certification. The internal motives could be either associated with operational performances or with managerial performances, whereas the external motives relate to those elements outside an organization that may affect all or part of it (like customers, competitors, government and suppliers). Quality *gurus* such as (**Crosby, 1979**), (**Deming, 1986**) and (**Juran, 1982**) have promoted quality concepts around the world and thus many firms have gradually embraced quality management practices. The implementation of ISO 9000 may have a positive or negative impact on registered firms. These can be in terms of the benefits and drawbacks conferred by certification. Also the nature of the benefits can be classified in terms of internal, external and financial benefits (**Casadesus and Gimenez, 2001**).

A study by (**Ahire & Gohlar, 1996**) found that the introduction of TQM in SMEs had helped to increase SMEs' market focus, to become more efficient, to exploit their human resources better, and to improve their competitiveness. In the same line, (**Shea & Gobeli, 1995**) found two major benefits of TQM to SMEs: improved customer satisfaction and a high level of employee satisfaction. (**Boon & Monder, 1998**) also stated that quality is applicable to all firms irrespective of size and context.

### Empirical Analysis

For our quantitative analysis we used correlation between variables and regression analysis. Correlation between variables will help us to measure the level of association between explanatory variables and their association with variablen pendant. The correlation is calculated for all explanatory variables. Regression analysis is used to accurately measure the individual effect of explanatory variables

**Table 1. Descriptive analysis of data**

	Average	Standard deviation	Minimum	Maximum	Standard error
LN STD	0,190	0,394	0,01	1,010	0,039
LN LIK	0,714	0,159	0,301	0,954	0,016
LN PROFIT	0,701	0,166	0,301	1,010	0,016
LN INCOME	0,609	0,182	0,301	1,020	0,018

Indicators of liquidity, profitability and revenues are studied individually, by calculating the maximum, minimum, average and standard deviation. Descriptive analysis was conducted in order to assist and empirical analysis to support the findings of empirical analysis.

**4.2. Regression analysis**

In order to analyze the theoretical expectations that explain the impact of the explanatory variables in the variable application of standards pendant should do regression analysis, by the amount of least squares.

	Koeficienti	Gabimi standard	t	P
LN PROFIT	0.4945	0.024	20.646	0.000
LN STAND	0.4275	0.059	7.184	0.926
<i>Koeficienti i regresionit = 0.587</i>				

	Koeficienti	Gabimi standard	t	P
LN SALE	0.483	0.015	30.724	0.000
LN STAND	0.512	0.039	13.118	0.926
<i>Koeficienti i regresionit = 0.798</i>				

From the results of the regression analysis we see that all coefficients are statistically different from zero (that is to say the statistical significance), thus increase the explanatory power of the model. In the model, the results suggest that the application of standards is positively associated with profitability, which means that if the enterprises apply quality standards, the average profitability of enterprises will increase to 0.427%. The result shows that the impact of the application of standards in profitability and revenue from sales is also positive. From the regression analysis is noticed that if enterprises apply quality standards, the average sales revenue will increase to 0.512%. DTS variability of profitability and revenue from sales is explained by 58.7% and 79.8%.

**Conclusions and recommendations**

This research concludes that there is a positive and significant relationship between ISO 9001, sales and profitability on Pollog region in Republic of Macedonia. Based on the research results in this field can be concluded that the application of ISO 9001 standard provides opportunities for the internationalization of the company, penetrating foreign markets and expand its market as a result we have increased sales and thus increase viability and profitability of the enterprise, but it does not affect product quality. There are various reasons to prove that affect the application of ISO 9001 in an enterprise. It thus confirms the studies of (Casadesus, Gimenez & Heras, 2001) on certified companies in Spain and Lima, Resende, and (Hasenclaver, 2000) on Brazilian firms. (Jang & Lin, 2007) conducted a study in Taiwan. For the methodology, they used the SEM techniques. SEM is a linear cross-sectional statistical modeling technique which includes covariance structure analysis, latent variable analysis, confirmatory factor analysis (CFA), path analysis (PA) and regression analysis (Botha et al., 1999). Their results show a positive relationship between ISO 9000 and firm performance. Therefore, we recommend companies to apply the standard for quality and ISO 9001 quality because even though at first glance be seen as a cost, in the future enterprise will benefit the quality of products and services and other hand will boost profit her. Benefits apply notwithstanding the size of the company, but small enterprises often have very small budget available. Precisely because of this, they need to invest in minimizing losses during product manufacturing.

**References**

1. Ahire S.L. and Golhar, D.Y (1996), "Quality management in large vs small firms", *Journal of Business Management*, January, pp. 1-3
2. Anderson, John C., Manus Rungtusanatham and Roger G. Schroeder (1994), "A Theory of Quality Management Underlying the Deming Management Method", *The Academy of Management Review*, Vol. 19, No. 3, pp. 472-509.
3. Arauz, R. and Suziki, H. (2004), "ISO 9000 performance in Japanese industries", *Total Quality Management*, Vol. 15 No. 1, pp. 3-33.
4. Blackham, A. (1992), "The Value of ISO 9000 Registration, Conclusions of an International Survey", *Bywater PLC, Reading, MA*.
5. Boon, S. and Ram, M. (1998), "Implementing quality in a small firm: an action research approach", *Personal Review*, Vol. 27, No ½, pp.20-40

6. Casadesus, M., Heras, I., and Ochoa, C. (2000), "The benefits of the implementation of ISO 9000 normative: Empirical research in the Spanish companies", *First World Conference on Production and Operations Management*, POM Sevilla.
7. Dean Jr, James W. and David E. Bowen (1994), "Management Theory and Total Quality: Improving Research and Practice Through Theory Development", *The Academy of Management*
8. Escanciano, C., Fernandez, E. & Vazquez, C. (2001). Influence of ISO 9000 certification on the progress of Spanish industry towards TQM. *International Journal of Quality and Reliability Management*,(18)5,481-494.
9. Gotzamani, K.D. and Tsiotras, G.D. (2002), "The true motives behind ISO 9000 certification – their effect on the overall certification benefits and long term contribution towards TQM", *International Journal of Quality & Reliability Management*, Vol. 19 No. 2, pp. 151-69.
10. Rayner, P. and Porter, L.J. (1991). BS 5750/ISO 9000—The experience of small and mediumsized firms.*International Journal of Quality and Reliability Management*, Vol.8 No.6, pp. 16–28.
11. Reeves, Carol A. and David A. Bednar (1994), "Defining Quality: Alternatives and Implications", *The Academy of Management Review*, Vol. 19, No. 3, pp. 419-445.  
*Review*, Vol. 19, No. 3, pp. 392-418.
12. Tennant, M. (1993), "Accreditation of certification: what's in it for me?", *paper presented at NACCB Workshop*.
13. Withers, B., Ebrahimpour, M. and Hikmet, N., (1996), "ISO 9000 and Strategic Sourcing: An Analysis", *Proceedings of the Western Decision Sciences Institute Conference*, Seattle, Washington.
14. Yann, C.J. (1998), "Performance evaluation of ISO 9000 registered companies in Taiwan", *The TQM Magazine*, Vol. 10 No. 2, pp. 132-8.
15. Zaramdini, W. (2006), "An empirical study of the motives and benefits of ISO 9000 certification: the UAE experience", *International Journal of Quality and Management*, Vol.24 No. 5, pp. 472-91.