COMPARISON OF THE USE OF METHODS FOR INCREASING THE QUALITY AND PERFORMANCE OF PROCESSES IN THE SLOVAK ECONOMY

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DOI: https://doi.org/10.31410/eraz.2018.282

Abstract: *The article deals about the analysis of methods for increasing the quality and performance of processes in enterprises in several sectors of the Slovak economy. It presents the results of the research carried out in 2017 on the sample of more than 500 different enterprises of the Slovak economy. Performed analysis provides a realistic picture of the possibilities of using various methods and tools in business practice. The application and implementation of the investigated methods brings positive results in achieving continuous improvement of the quality of products and services as well as improving the performance of business processes.*

Key words: *Quality, performance, process, methods, change*

1. INTRODUCTION

Nowadays, processes, process management, and process changes to improve quality and performance have become a very common subject. We can look at the issue from different angles. Continuous growth of competing claims and customer demands forces companies to analyse the attributes of their processes in detail, to use new methods, tools, techniques, and approaches to analysing, evaluating, managing, making changes and optimizing them. This article is part of the research project VEGA 1/0286/16 - Management of Changes Based on a Process Approach. The research, which was carried out in 2017, addressed 508 enterprises from different sectors of the economy of the Slovak Republic. Research was focused on identifying ways to use methods and tools to improve the quality and performance of business processes. The first part of the questionnaire survey contained general questions about the average number of employees, the main subject of the activity of the company, the ownership of capital, the sector and the profitability. The partial result of the project solution is to compare the use of methods to increase the quality and performance of processes in enterprises. For comparison, we chose the wood processing industries (WPI) and the mechanical, automotive and electro technical industries that formed one automotive group (Automotive).

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2. THE PROCESS, PROCESS MANAGEMENT, CHANGE MANAGEMENT, QUALITY AND PERFORMANCE

Process represents integrated activities that generally require participation of several activities. Processes must be purposeful and efficient, they should serve customers, not the company [8].

Authors [5] define process as a set of activities that require one or several types of inputs and creates outputs that have a certain value for the customer.

The definition of the process and its essence is analysed by several authors [10], [13], [18] and [19]. Based on the content of the above definitions, we can state that some authors do not distinguish the concepts of the business process and process, their definitions are similar. By combining multiple definitions, we can define a simple process definition, such as input to output transformation, through various activities and activities that meet the goals of the corporate strategy.

The concept of quality is general and everyone can understand it in a different sense. For some, it's speed, precision, or good material. The author [1] considers quality as a special function, subject, or property that is considered in thought or speaks of its nature, state or properties. The definition of quality as an entity is supported by "dimension", while "properties" are indicators or components of dimensions.

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Comparing the main ideas of the authors [2], [6], [12], [16], [20] and [22] the classification and structure of methods, tools and techniques for managing and changing processes can be diverse. A classic breakdown of these methods used to ensure quality in all phases of the production cycle is the breakdown of methods into seven traditional and seven new tools of the quality management.

The basic idea of process approach according to [21] is that the cause of potential problems in the organization is poorly conceived and ongoing processes that need to be redesigned and simultaneously eliminate all activities that do not bring value to the customer.

The principle of process management is based on the maximum integration of activities between individual organizational units, where the fundamental innovation represents the perception of the process as a whole, and it is not decisive whether the entire process takes place in one organizational unit or goes through the entire organization.

Process thinking is based on the principle of a horizontal process, unlike a functional one that is based on a vertical hierarchy. The difference between process and functional management lies in defining responsibilities. While functional management determines the responsibility for the individual sections, the process management defines the responsibility for each process [9].

Author [7] defines a process approach as the goal of understanding and organizing company resources at the same time as their activities to optimize business operations. Applying a process approach requires identification of the main management and subsidiary business processes.

Changes that may occur in the enterprise in technology, in consumer preferences, markets, organizational structure, business environment, procedures, and practices, in individuals where employees need to change their habits, attitudes, skills, and capabilities, depending on the rapidly changing environment [3].

Change management in the enterprise by [11] can be seen as a project for which it is necessary to observe the following steps: defining targets and milestones, identify the person, their roles and responsibilities, determine the form and extent of communication, establishing a timetable.

Successful change requires adaptation of methods, techniques, strategies and implementation tactics to specific history, culture, and people in the organization. The change process is very complex, but there are models to make the change [17].

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  Period: 1991 -1992

Author [15] argues that the management of changes is a core set of knowledge and skills that are essential to ensure the required quality solutions to the problems of organizational changes. Change means a qualitative transformation of certain characteristic parameters that describe the state of the object or event.

As [14] point out, the value of an enterprise is determined by its performance. If we want to increase the value of an enterprise, we need to increase its performance. That is, if we want to increase business performance, we should increase the performance of business processes, especially the major processes.

Measuring enterprise performance is not an end in itself. The goal is not to measure but to enable performance improvement. Measurement using certain indicators must therefore be part of the ongoing program of analysing, evaluating and improving operational performance [4].

3. RESULTS AND DISCUSSIONS

From the partial survey results listed in the table: 1, we can see that up to 82. 36% of WPI enterprises can be classified as small businesses. In automotive, we recorded higher% in medium and large enterprises. From the above we can state that in Slovakia WSP is concentrated mainly in small and medium-sized companies. More large companies in the Automotive, are mostly companies producing cars and medium-sized firms in engineering and electrical engineering focus, supplying components for automakers.

Sector	***Number of employees in %***					
	0 – 10	***11 – 20***	***21 – 50***	***51 – 250***	***Over 250***	***Together***
WPI*[166]	42.12	25.61	14.63	7.30	7.30	100.00%
Automotive*[167]	26.19	9.52	28.57	11.90	23.81	100.00%

Table 1: What is the average number of employees in your company?

Sector	***The main subject of the activity***				
	Production	***Business***	***Service***	***Distribution and transportation***	***Together***
WPI	86.59	9.76	2.44	1.22	100.00%
Automotive	73.81	4.76	21.43	0.00	100.00%

Table 2: What is the main subject of activity?

From Table 2, it is clear that WPI and Automotive dominate the main activities of production, business and service. Only 1.22% of WPI companies are focused on distribution and transportation of wood.

Sector	***The ownership of the company***				
	Net domestic capital	***Prevailing domestic capital***	***Prevailing foreign capital***	***Net foreign capital***	***Together***

[166] WPI – wood processing industry
[167] Automotive - engineering, automotive and electro technical industries

WPI	79.27	14.63	1.22	4.88	100.00%
Automotive	69.05	16.67	4.76	9.52	100.00%

Table 3: What is the ownership of your company?

Up to 93.90% in WPI and 85.72% in Automotive dominate net domestic capital or prevailing domestic capital. Greater% of net foreign capital is in Automotive.

Sector	***ROE - Return on Equity***						
	ROE < 0	***0%-2%***	***2%-4%***	***4%-7%***	***7%-10%***	***Over 10%***	***Together***
WPI	7.32	25.61	15.85	31.71	15.85	3.66	100,00%
Automotive	4.76	21.43	23.81	23.81	4.76	21.43	100,00%

Table 4: What was the return on equity (ROE) in your company in 2017?

The results in Table 4 show that 92.68% in the WPI enterprises and 95.24% in the Automotive enterprises achieve ROEs greater than 0. For Automotive businesses, up to 21.43%, the ROE is above 10%.

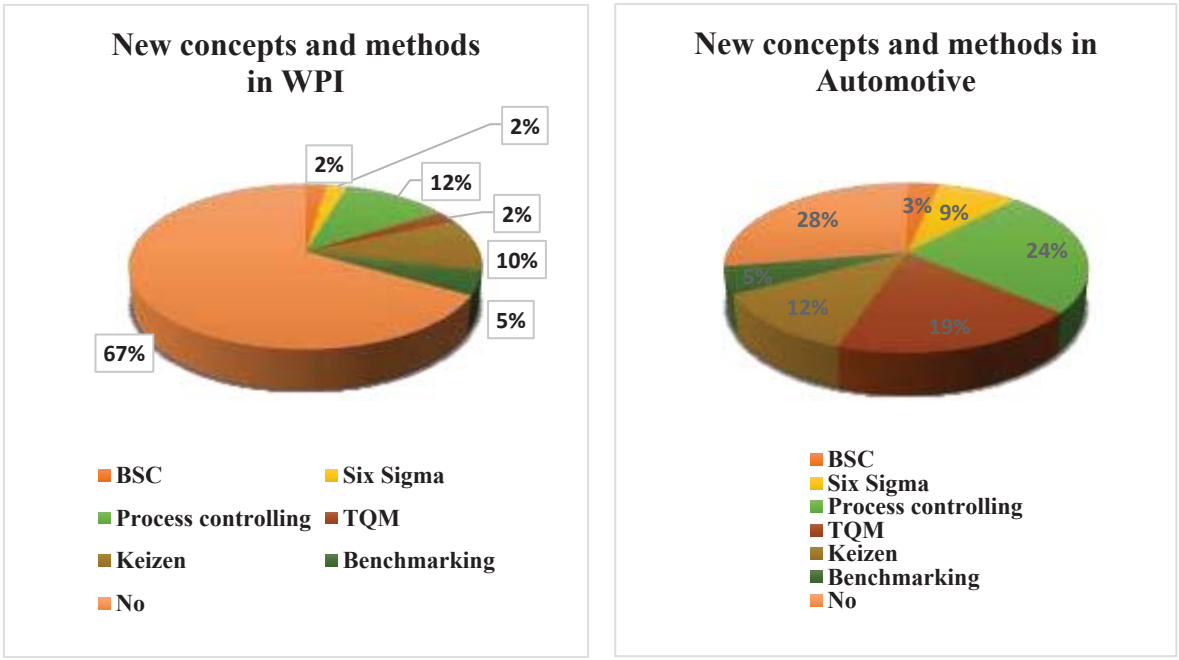

Figure 1: What new concepts and methods have you used or used to improve processes? (More options)

In the graphs 1 - 4, we can see a comparison of new concepts, methods, approaches implemented, process modeling tools and models for analysis and optimization of processes in the WPI and Automotive.

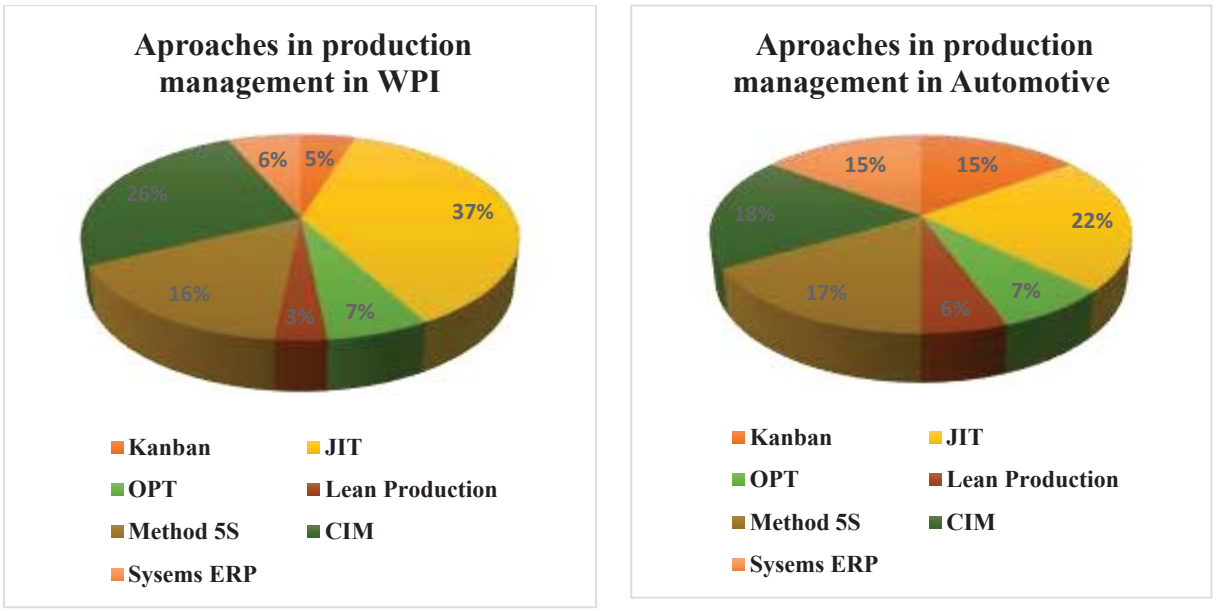

Figure 2: What approaches have you implemented to manage production? (More options)

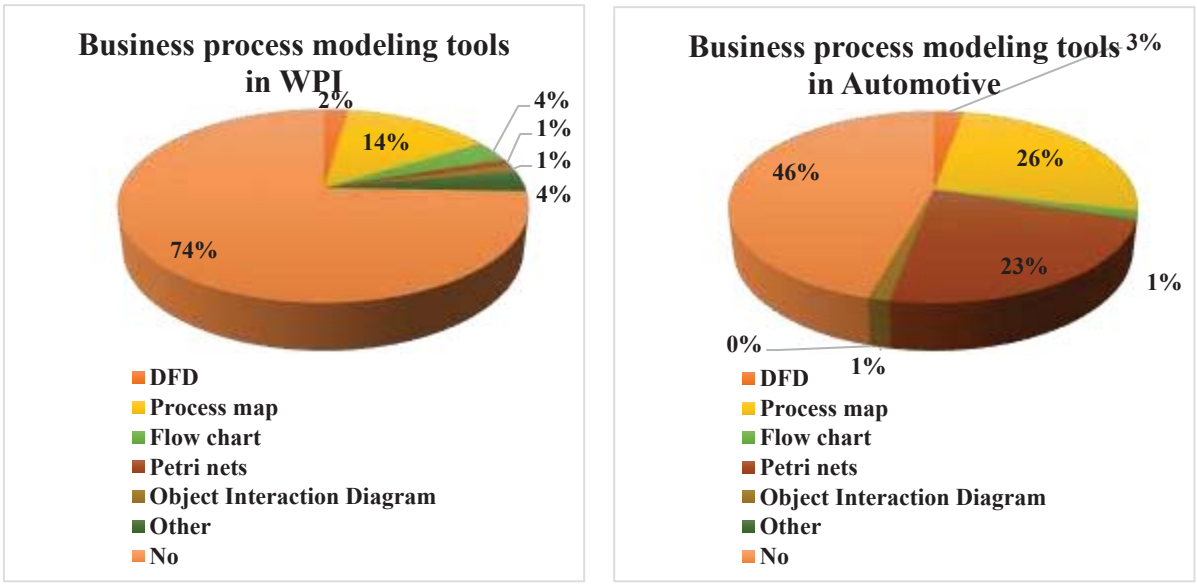

Figure 3: What business process modeling tools does your company use? (More options)

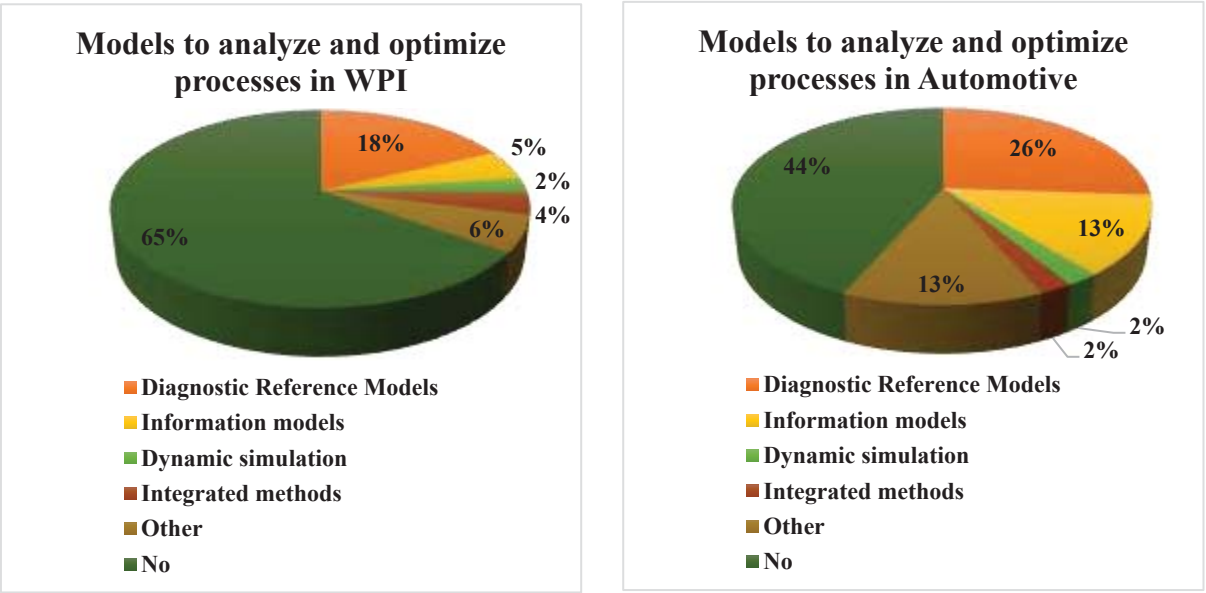

Figure 4: What models does your business use to analyze and optimize processes? (More options)

From Figure 5 and 6, there is a correlation between enterprise size and the application of new quality improvement methods. Large enterprises use the methods listed, all medium enterprises almost all. The worst situation is for small businesses up to 50 employees, there is a variance of responses is relatively small and is inclined to the view that small businesses in most cases, new methods used. In the automotive industry, it is similar, where large businesses also use quality improvement methods and tools, the medium enterprise is about the same as the WPI business, and a much better situation is for small businesses where most of the answers were in favor of using these methods.

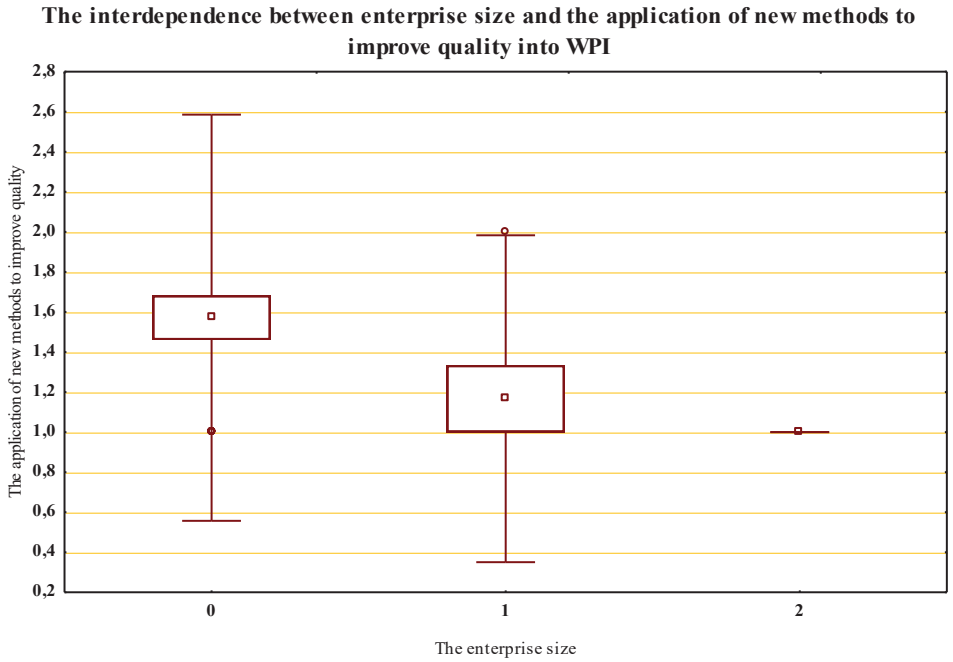

Figure 5: The independence between enterprise size and the application of new methods to improve quality into WPI

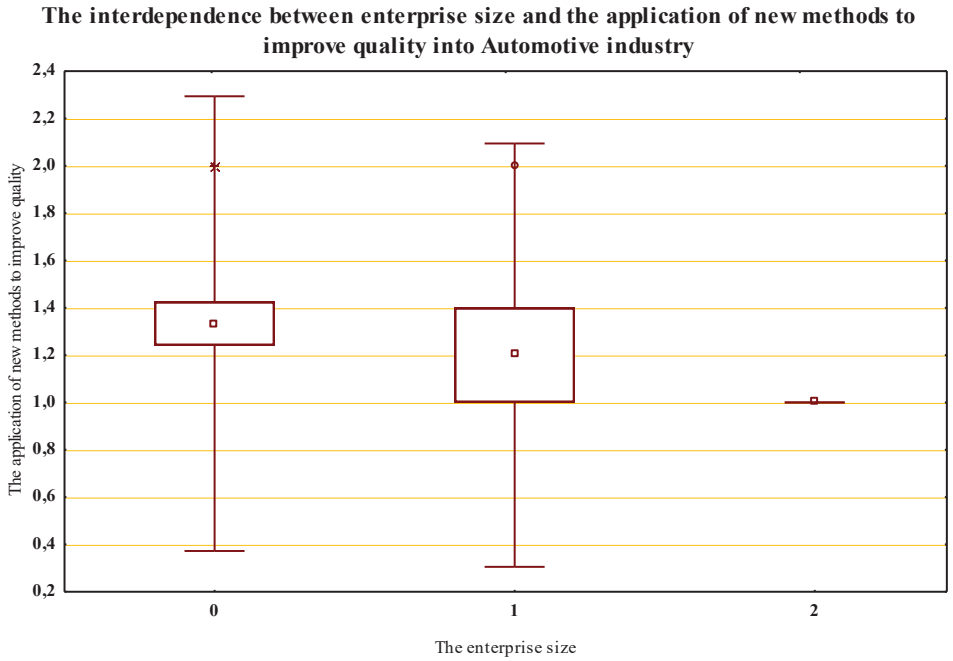

Figure 6: The independence between enterprise size and the application of new methods to improve quality into Automotive industry

When we analyzing the use of business modeling tools in WPI and the automotive industry (Figure 7 and 8), we can say that the better situation is in WPI, large businesses use business modeling tools all, in automotive almost all, medium-sized businesses are better once again WPI enterprises and worse situation is only for small WPI businesses that do not use business modeling tools at all.

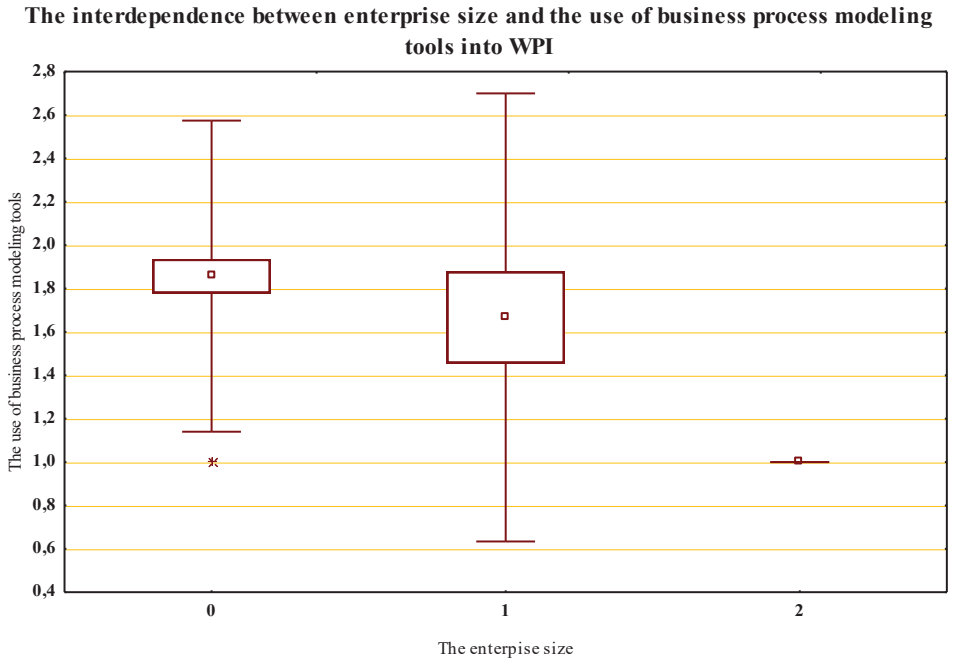

Figure 7: The independence between enterprise size and the use of business process modeling tools into WPI

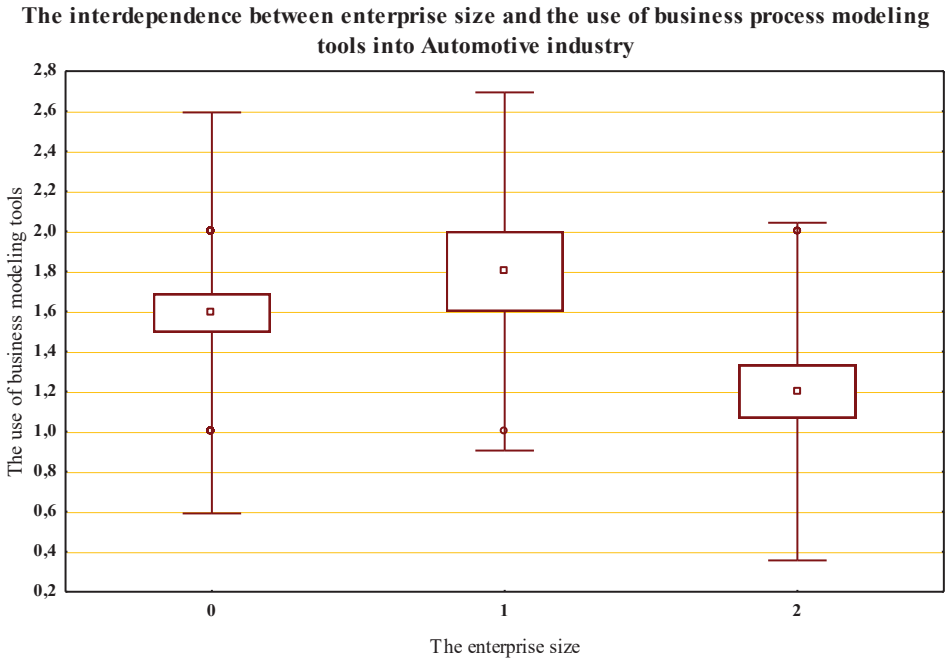

Figure 8: The independence between enterprise size and the use of business process modeling tools into Automotive industry

4. CONCLUSION

In the past, quality management was only attractive to large organizations. The quality certificate is also of interest to medium and small businesses, especially if it is attractive to them to make quality policy attractive, even if it is a step ahead of competition, or to apply for state commitments. Since research has shown that many of the organizations that have been approached by a quality management system according to an ISO standard, it is to know that in our wood – processing industry, most have already understood that modern management methods and systems are needed. The added value of modern methods and systems is enormous. In quality management systems, top management would need to call for the introduction of these systems into their organization. This also involves the need to motivate and inform all employees of all the benefits that the certificate brings to the organization. But also to inform about the whole process of building quality management systems so that business is not affected and so as to avoid undesired situations and conflicts.

Acknowledgements: We wish to thank project VEGA - Scientific Grant Agency of the Ministry of Education, Science, Research and Sport of the Slovak Republic (Project No.1/0286/16 and No. 1/0537/16) and KEGA agency, Slovakia (Project No.11TU Z-4/2017) .

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