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Internal Control and IT System Support in Management Decisions Established in Medium and Small Agricultural Enterprises in the Republic of Serbia

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Received: 29 May 2025; Accepted: 11 October 2025

Abstract: Internal control in the context of support of IT innovative systems can contribute to improving important management decisions by the top management of small and medium-sized agricultural enterprises in transition economies. This setting of the framework for the operation of management functions in agriculture is particularly important in the functioning of agricultural and other heterogeneous enterprises. The aim of the research of the authors of this study was to compare the functioning of management in two forms of organization of agriculture to gain insight into how top managers behave in terms of the practical application of internal control carried out with the support of IT. We have established that there are differences in terms of assurance, efficiency, costs, effectiveness, IT and overall business performance of both forms of enterprises in the Republic of Serbia ($p < 0.0005^*$). This provides the basis for future quality business decision-making that will combine internal control and IT support in the work of both small and medium-sized agricultural enterprises. The results obtained are important for agricultural business in the Republic of Serbia as well as in the business of a number of countries in the Western Balkans economy and beyond.

Keywords: *IT; internal control; small and medium company; business results.*

1. Introduction

Internal control as part of the real functioning of numerous enterprises, differing in their characteristics, especially in size, requires the adoption of various adaptation techniques in order to improve the adoption of quality management decisions [1]. In addition to the implementation of internal control in the processes of improving management in the work of many industries, including agriculture, the application of IT systems to support overall efforts related to improving business and improving management is being introduced [2-4]. Internal control and support of IT systems in management is directed by the management of the enterprise to correct various influencing factors, especially when it comes to the operations of enterprises in agriculture that have different sizes in order to achieve a real improvement in business efficiency [5-7].

Long-term and development planning carried out by top management involves increasing the overall efficiency of operations of heterogeneous legal entities, and the application of which is particularly expressed in agriculture and the conduct of agricultural policy [8,9].

The essence of such efforts to introduce innovative technologies in order to increase overall business results is to consider the possibility of more rational management of company resources on the one hand, and on the other hand to make the results of such economic activities as good as possible [10-13].

In addition to classic management improvements, medium-sized agricultural enterprises are increasingly introducing less common management improvement mechanisms, such as the introduction of internal control of all processes in all organizational parts of the enterprise [14-16].

Therefore, it is not surprising that the authors' works focus on solving problems that are in the focus of improving the quality of management decisions, such as reducing the operating costs of small and medium-sized agricultural enterprises in order to improve overall operations [17].

Thus, the focus of observation was on the concretization of the operations of numerous legal entities, which inevitably points to the importance of operations and their improvement in agriculture [18-20].

Previous theoretical considerations, especially in the countries of the so-called Western Balkans that have been affected by strong transitions, point to development processes in agriculture by introducing heterogeneous instruments that improve overall management and increase profits as target categories [21-25].

Therefore, observing certain factors such as factors of reducing operating costs, factors of economy, effectiveness and others in the existence of numerous segments of agriculture, should include applications such as internal control, internal audit, application of a developed IT system and others in order to have a substantial development of an activity that is very specific like agriculture [26-30].

2. Materials and Methods

2.1. Sample

For the purposes of this study, the authors conducted a survey in 222 agricultural enterprises operating throughout the territory of the Republic of Serbia. The research period was from June 1 to 20, 2025. The survey included 100 medium-sized agricultural enterprises and 122 small agricultural enterprises.

On this occasion, the analysis was carried out by comparing approximately the same number of respondents in two forms of organization, evaluating the internal control introduced to support the operation of IT systems in regular business.

After that, data processing was carried out using classical statistical data processing. The survey was completed by top managers of medium-sized and small agricultural enterprises.

The evaluation interval ranged from 1 to 10. The highest score, or score 10, was the highest trust, and score 1 was the lowest trust in the operation of internal control in the regular operations of the aforementioned surveyed entities.

The following factors were analyzed: the possible impact of organizational units on the company's operations, the costs of IT systems in regular operations, the specifics of the activity in which the company generates the majority of its income, i.e. in relation to its survival on the market, and in relation to the expected business results in the next period of time.

Finally, the results obtained were processed using classical statistical processing for the purpose of continuing the comparative analysis and presenting the obtained results.

2.2. Methodology

The research was conducted in the business of two forms of introducing internal control with the support of IT systems, namely in medium and small agricultural enterprises.

This was done in order to reveal possible differences in the attitude of top management regarding the analyzed individual factors and their scores.

The use of comparison of top management assessments was used in order to determine individual and overall differences in beliefs regarding the importance of implementing internal control in regular management processes.

The research covered the area of operation and business of medium and small agricultural enterprises operating throughout the territory of the Republic of Serbia.

2.3. Hypotheses used in the paper

For the purposes of the paper, the following hypotheses were set:

H: 1 that there are no deviations when considering the individual analyzed factors of internal control and the application of IT support in the work of medium and small agricultural enterprises.

H: 2 that there are no deviations when considering the total analyzed obtained values of the evaluated factors of internal control and the application of IT support in the work of medium and small agricultural enterprises.

2.4. Statistical analysis

The authors applied statistical data processing using IBM SPSS (Statistical Package for Social Sciences) version 25.

In order to obtain more complete and reliable views, the authors used and applied T-tests in the evaluation of medium and small agricultural enterprises, i.e. the significance (0.05) of the aforementioned belief of top management regarding the functioning of the aforementioned two forms of enterprises was evaluated.

3. Results

The results obtained in terms of evaluating the application of internal control with the support of IT in the work of medium and small agricultural enterprises are grouped into two parts.

3.1. Presentation of the results of individual factors on the introduced business with the application of internal controls with the support of IT systems on the work of medium and small agricultural enterprises

The authors presented the obtained results systematized in the display of Table 1.

In addition, it provides a presentation of the strengthening of the obtained results by application after the t-test.

The results are systematized in relation to two forms of organization by the economy in relation to the applied internal control that is introduced into regular business processes is systematized by presenting the significance relationship in relation to the two forms of organization in terms of internal control.

The specification of individual results is given in the display in Table 1.

Table 1. Presentation of individual differences in influencing factors between medium and small agricultural enterprises regarding the implementation of internal control with IT support.

	Medium-sized agricultural enterprises	Small agricultural enterprises	t	p
	Average value			
Business security	7.69 ± 0.39	4.76 ± 0.42	51.580	<0.0005*
Efficiency	7.70 ± 0.40	5.75 ± 0.38	18.560	<0.0005*
Business costs	8.25 ± 0.44	6.46 ± 0.45	-42.756	<0.0005*
Effectiveness	7.00 ± 0.77	6.45 ± 0.44	-17.711	<0.0005*
IT support	8.55 ± 0.51	8.50 ± 0.50	-42.979	<0.0005*

The obtained results indicate in significant deviations in the evaluation of all analyzed factors in medium and small agricultural enterprises regarding the implementation of internal control in real business.

3.2. *Prediction of the strategy of top management in relation to the factors of possible influence on the standard observation of the IT system in the practical application of business*

The results are grouped in the form of a systematized Table 2, which essentially shows the possible impacts and trends in the coming period in relation to the analyzed factors of possible impact on the business and functioning of medium-sized agricultural enterprises that have introduced standard monitoring of IT systems.

Table 2. Presentation of overall differences in terms of implementing internal control with IT support.

	Medium-sized agricultural enterprises	Small agricultural enterprises	t	p
	Ave rage value			
Total	7.72 ± 0.23	6.99 ± 0.20	-11.488	<0.0005*

Source: Authors (2025).

By presenting the obtained results in Table 2, a comparative analysis was essentially performed which shows the evaluation of the total score of the analyzed factors in terms of the real implementation of internal control with the support of IT in medium and small agricultural enterprises that actually operate.

The overall score clearly showed a large deviation between the two forms of organizing agricultural enterprises in Serbia.

All this was strengthened by the application of the t-test and the display of actual significance.

4. Discussion

By presenting the results obtained, the authors presented in the first part of the study (Table 1) the impact of individual factors on the assessment of top management of medium and small agricultural enterprises regarding the introduction of internal control into business processes.

Essentially, the authors presented the results obtained in relation to the real business of medium and small agricultural enterprises regarding the practical application of internal control with the support of IT systems supporting real business.

All this included the application of the analyzed factors, namely: the application of business security of the surveyed legal entities, their efficiency, and effectiveness, the impact of costs and IT, which is shown in Table 1. The first observation of the comparison of the results obtained would be that there is greater trust of top management of medium-sized enterprises in the work and business that applies internal control in its regular business.

All that has been stated is reinforced by the application of the t-test and the significance (p<0.0005*) of internal control operations as a factor of possible significant influence on the making of important management decisions by the top management of medium and small agricultural enterprises in Serbia.

Another important consideration of individual factors that can influence the operations of the aforementioned legal entities would be that there is a gradation of trust that can be formed in the following way.

The greatest trust in both forms of legal entities exists in the IT factor as an auxiliary factor in improving the work of internal control, then in relation to the movement and monitoring of costs, then in relation to the possible achievement of efficiency and effectiveness and finally in relation to business security in the work of the aforementioned agricultural enterprises.

In this way, the reality is seen that H: 1 can be rejected, that is, that there are real differences in the understanding of individual evaluations of the analyzed factors in the work of the mentioned entities.

Therefore, the results obtained in this study largely coincide with the authors' previously published views [31-33].

In the second part of the presentation of the obtained results, the authors gave the overall assessment of the analyzed factors, expressed collectively in the form of their total score. In this way, the stated positions were confirmed regarding the individual consideration of the evaluated five factors of possible impact on the work of internal control.

This was achieved in a way that clearly shows the higher values of the overall score assessment for the operations of medium-sized agricultural enterprises compared to small enterprises.

The stated position was additionally strengthened by the presentation of the values after the presentation of the t-test results, i.e. the significance itself, which strengthened these positions even more. Thus, it is concluded that all the analyzed positions in the study, as well as their scores, significantly affect the operations of medium-sized and small agricultural enterprises, as well as their overall score.

Thus, after presenting the results in Table 2, it can be seen that they are such that H: 2 can be rejected, i.e. it is clearly seen that the total score of the analyzed factors shows a significant deviation in the trust of the top management of medium-sized agricultural enterprises compared to the top management of small agricultural enterprises that operated in Serbia in 2025.

Similar views are already visible in earlier works in which the focus of the research was internal control in various impacts on heterogeneous economies [34-35].

5. Conclusions

The obtained results of the study have unambiguously confirmed the existence of the expectations given at the beginning of this study by the author. The study indicated the existence of the following conclusions.

First, that the implementation of internal control with the support of IT is very strong in the operations of medium-sized agricultural enterprises, as well as in small agricultural enterprises. Such implementation is very strong and has a strong impact on business decision-making by top management.

Second, that all analyzed factors individually affect top management in terms of the implementation of internal control (shown in Table 1) and at a significant level because the values obtained are ($p < 0.0005^*$), which implies a strong implementation of internal control in the future in the work of the aforementioned legal entities.

Third, in the case of the gradation of the importance of the application of the analyzed factors, the greatest influence is the application of IT, then costs, efficiency, effectiveness and finally business security in the framework of making valid management decisions by top management.

Total influence of the aforementioned factors within the framework of observing their overall score is such that a stronger influence exists in the evaluation of internal control in the functioning of medium-sized agricultural enterprises compared to small agricultural enterprises operating in the Republic of Serbia.

Finally, this study has fully shown that there is a great importance of the application of internal control in the work of medium-sized and small agricultural enterprises, as well as the need to pay special attention in the future within this implementation to the consideration of IT system support factors, i.e. operating costs that are strongly influenced by internal control.

Conflicts of Interest: The authors declare no conflict of interest.

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