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FRAUD PREVENTION MEASURES IN SERBIAN SMALL AND MEDIUM-SIZED ENTERPRISES: EXISTENCE AND EFFECTIVENESS

Mere za sprečavanje prevara u malim i srednjim
preduzećima u Republici Srbiji – prisustvo i efikasnost

Abstract

The aim of this paper is to examine the influence of enterprise characteristics on the degree of application of fraud prevention measures. In addition, this paper is supposed to show whether respondents' characteristics affect their opinion about the effectiveness of different fraud prevention measures, as well as if there is a difference between the degree of their implementation and respondents' opinion on their effectiveness. The research was conducted in November 2018 and the data were collected using a questionnaire which was taken over to a great extent from N'Guilla Sow, Basiruddin, Mohammad and Zaleha Abdul Rasid [17, pp. 514-517]. Although the non-parametric statistical techniques used showed that there is (1) no influence of enterprise characteristics on the existence of fraud prevention measures and (2) no influence of respondents' characteristics on their opinion about the effectiveness of fraud prevention measures, the median analysis showed that there is some influence. We have also found that there is some difference between the level of existence of the said measures and respondents' opinion about their effectiveness.

Keywords: *fraud, fraud prevention measures, internal control, small and medium-sized enterprises, financial reporting.*

Sažetak

Cilj rada je ispitivanje uticaja karakteristika preduzeća na stepen primene mera za sprečavanje prevara. Osim toga, rad treba da pokaže da li karakteristike ispitanika utiču na mišljenje o efektivnosti različitih mera za sprečavanje prevara, kao i da li postoji razlika između stepena primene mera za sprečavanje prevara i mišljenja ispitanika o njihovoj efektivnosti. Ovo istraživanje je sprovedeno tokom novembra 2018. godine i podaci su prikupljeni putem ankete koja je u velikoj meri preuzeta od N'Guilla Sow, Basiruddin, Mohammad i Zaleha Abdul Rasid [17, pp. 514-517]. Iako su upotrebljene neparametarske statističke tehnike pokazale da (1) ne postoji uticaj karakteristika preduzeća na prisustvo mera za sprečavanje prevara i (2) ne postoji uticaj karakteristika ispitanika na mišljenja o efikasnosti mera za sprečavanje prevara, analiza medijana je pokazala da ipak postoji neki uticaj. Istraživanje je, takođe, ukazalo da postoje razlike između nivoa postojanja mera i mišljenja ispitanika u vezi efektivnosti tih mera za sprečavanje prevara.

Cljučne reči: *prevara, mere za sprečavanje prevara, interna kontrola, mala i srednja preduzeća, finansijsko izveštavanje.*

Introduction

In many countries worldwide, fraud that happened in big enterprises, precisely because of their size and influence on the economy of the entire country, leave a deep mark on the economy of those countries. However, this does not mean that fraud in small and medium-sized enterprises (SMEs) should be neglected or that prevention thereof should be disregarded. Many research studies have shown that fraud committed in SMEs causes less financial loss in comparison to fraud in big enterprises. However, cumulative financial loss caused by fraud in SMEs largely surpasses the financial loss incurred by big enterprises. For these reasons, it is highly important for fraud prevention techniques to be adequately applied in all enterprises, regardless of their size. Furthermore, the significance of analysing fraud prevention measures in SMEs stems from the fact that their importance is “widely discussed, primarily due to a fact that their development is seen as the opportunity to solve key problems that national economies face related to the growth of economic activity, employment and GDP” [16, p. 325].

The subject of this research paper are the data on the existence of fraud prevention measures, as well as respondents’ opinion on the effectiveness of these measures, regardless of whether they are applied in certain SMEs. The aim of this paper is to examine the influence of enterprise characteristics (size and type of activity) on the degree of application of fraud prevention measures. In addition, this paper is supposed to show whether respondents’ characteristics (job position, education and work experience) affect their opinion about the effectiveness of different anti-fraud measures, as well as if there is a difference between the degree of implementation of these measures and the opinion of respondents on their effectiveness. This paper tests the following hypotheses:

- H_1 : There is no difference between the degree of existence of fraud prevention measures and respondents’ opinion about their effectiveness.
- H_2 : Enterprise characteristics will not significantly influence the degree of implementation of fraud prevention measures.

- $H_{2,1}$: The size of an enterprise will not significantly influence the degree of implementation of fraud prevention measures.
- $H_{2,2}$: If enterprises differ in terms of their activity, this will not significantly influence the degree of implementation of fraud prevention measures.
- H_3 : Respondents’ characteristics will not significantly influence their opinion about the effectiveness of the given fraud prevention measures.
 - $H_{3,1}$: The respondent’s position in the enterprise will not significantly influence their opinion about the effectiveness of the given fraud prevention measures.
 - $H_{3,2}$: The respondent’s level of education will not significantly influence their opinion about the effectiveness of the given fraud prevention measures.
 - $H_{3,3}$: The respondent’s work experience will not significantly influence their opinion about the effectiveness of the given fraud prevention measures.

The rest of the paper is organized as follows. The next section addresses the literature review of fraud prevention measures and fraud in small and medium-sized enterprises. The third section describes the research sample and methodology, followed by the results and discussion in the fourth section. The last section contains concluding remarks.

Literature review

Fraud prevention measures

Preventing fraud creates an environment where there is less opportunity for fraud to occur [18, p. 16]. Discovering fraud on time is highly important in order to reduce or completely prevent financial loss that can be caused by the fraud. However, sometimes fraud is discovered too late and financial loss is inevitable. Because of that fraud prevention is crucial if a company wants to eliminate the possibility of fraud in the long run. Preventing fraud means creating business conditions which do not give fraud perpetrators

the possibility for manipulations. Companies used diverse fraud prevention measures to mitigate the risk of fraud in their business. Those measures include internal control, employee background checks, employee training and education on fraud issues, equipping employees with a fraud anonymous reporting system, etc. [5, p. 528], [6, p. 32], [13, p. 402], [21, p. 93].

Fraud discovery and prevention are inevitably connected and together make a fraud prevention system. In order to prevent fraud in financial reports, top management of a company should create a positive control environment. In the interest of doing that, members of the board of directors and audit committee should show adequate attitude towards internal anti-fraud processes and control, which includes expressing high integrity and positive ethical values. This also requires active participation in daily operations of an enterprise and frequent meetings aimed at discussing current activities and business performance. An effective internal control system requires and includes a reliable accounting system, adequate control policies and actions, as well as policies which ensure adequate protection of company assets. It also requires clearly defined accounting and financial reporting policies [23, p. 9].

One of the key elements of fraud prevention is the establishment and adequate organization of internal control. Internal control represents a collection of policies, measures, procedures and actions established by the management with the aim of reasonably ensuring that specific goals of the enterprise will be achieved through daily business activities [15, p. 48]. Practice has shown that enterprises with adequate and well-organized internal control leave minimum possibility for fraud to occur. Obviously, if the integrity of financial reporting is to be assured, internal control should be of high quality [3, p. 342]. Costs of establishing, implementing and creating effective internal control are very high, but benefits of discovering and preventing fraud are far greater. Depending on the role of internal control in the business process, it can be preventive, detective or corrective.

Well-established internal control consists of five interconnected components whose successful integration leads to successful achievement of all company goals. According to the Committee of Sponsoring Organizations

of the Treadway Commission – COSO, internal control components are the following: control environment, risk assessment, control activities, information and communication, and monitoring. Control environment is the basic and starting component of the internal control system and represents the foundation for the development of all the other components. Attitudes, awareness, and activities of the management and all the employees in the company regarding internal control and its significance represent the core element of this component. Risk assessment includes identifying and analysing risks which could negatively influence the achievement of company goals, as well as determining the ways for managing those risks. Control activities are activities of the management and other employees in the company which are conducted in order to ensure that doing business tasks leads to effective achievement of company goals. Information and communication cover the process of identifying, gathering and exchanging information necessary for achieving control goals. Monitoring represents the process of assessment of quality of the internal control performance over time [15, pp. 124-136].

One of the elements of fraud prevention in business is creating a so-called fair business environment in which employees respect ethical principles, management puts company goals above personal ones and employees' work is respected and appreciated. One of the first elements of creating such business environment is hiring honourable people. Practice has shown that constant background checking of employees is an excellent way of control [2, p. 101]. New employees should be checked by means of careful inspection of their biographical data. Inspection can also include searching publicly available databases.

For sensitive positions (for instance, department managers, controllers), hiring an external agency should be considered in order to obtain information about candidate's work experience, education, professional licence, recommendations, criminal records, military service and driver's licence. For highly sensitive positions, it is necessary to take into consideration hiring a private investigator in order to perform a thorough background check [7, p. 70]. Employees in charge of interviewing candidates should be adequately trained. They should not only know which

questions to ask, but also possess the ability to detect ambiguous and inadequate answers. Companies should always communicate with the previous employers and verify the recommendations which they have given for a certain employee. Due to litigation risk, previous employers will not disclose negative information about their former employees. However, they can willingly express a positive attitude about a candidate which can be more informative than just discovering date of employment [23, p. 9]. The second element which contributes to the creation of a fair business environment is creating a positive work environment, which is not possible overnight. The fact is that in certain enterprises there are more people who are ready to commit fraud than in other enterprises. In other words, some enterprises are much more vulnerable to fraud than others. In order for an enterprise to be less vulnerable to fraud, it needs to create a good corporative code of conduct, expecting employees to perform honest work, creating an "open door" system which would enable employees to have undisturbed communication, especially with the top management, and appointing fair and honest people to key positions in the company [7, p. 70].

Constant education of employees about the dangers of fraud largely contributes to fraud prevention because it raises employees' awareness of acceptable and unacceptable behaviour. They should know what to do when they notice someone acting contrary to the company's code of ethics. Training should make employees aware that by reporting manipulative actions they protect not only the company, but their jobs as well. The management should initiate such training, but should also be a role model employees can look up to in terms of what is acceptable. Establishing adequate policy and procedures can help fraud prevention, because if there are procedures which are hard to avoid and manipulate, the possibility of fraud is to a large extent eliminated. Apart from the aforementioned general fraud prevention measures, many companies use a number of other specific prevention measures. Measures which are to be used depend on many factors: size of the company, financial possibilities, personnel training, business characteristics of the company, country of operation, degree of development of the internal control system, legal obligations, etc. Some of the measures include video

surveillance, constant monitoring, judicial proceedings and conducting frequent and unannounced audits [22, p. 186].

Fraud in small and medium-sized enterprises

Fraud scandals do not harm only large companies, but also affect small businesses. According to the Report to the Nations on Occupational Fraud and Abuse [4, pp. 17, 26-27], the median loss incurred by small businesses was estimated at \$147,000, whereas the median loss for large organizations was \$100,000. Besides financial losses, fraud impacts the reputation of SMEs and the confidentiality of their stakeholders (customers, shareholders, creditors, etc.) [17, p. 500]. In addition, fraud represents one of the reasons SMEs fail in their strategic activities and, in extreme cases, it may put the whole company out of business. For instance, an entrepreneur may spot a good business opportunity to launch a new venture and establish their business plan with the assumption that their strategies will be employed smoothly. However, if one fails to take preventive measures against fraud, the business may fail. Finally, when fraud becomes a cost of doing business, it will put SMEs at a competitive disadvantage [1, p. 56]. Small businesses are at greater risk of fraud because they do not have the resources that larger companies have to install sophisticated security devices and elaborate audit and security procedures [10, p. 58]. For example, one of the basic elements for effective internal control is segregation of duties. The problem in small businesses is a limited number of staff. Although hiring additional employees is one clear solution to the problem, it is not always attainable. Some authors [9, p. 32] suggest other possible solutions: rotation of duties, monitoring by the management, hiring third parties to supplement in-house staff and conducting a top-down risk-based analysis.

Small businesses are most vulnerable to two types of fraud from within: asset misappropriation and corruption. Moreover, according to the study which was used in his research, Wells [25, p. 27] points out that the average length of time occupational fraud goes on before being discovered is about 18 months. By recognizing common warning signs or red flags of these schemes early, businesses can reduce or avoid losses. Fraud indicators include: rising

expenses and/or declining revenue, abnormally high inventory shrinkage, unfamiliar vendors or other payees and excessive spending by employees. Moreover, studies have shown that employees who engage in abuse of power at a workplace (e.g. excessive absenteeism, goldbricking, pilfering) are at higher risk to commit fraud [25, p. 28].

Within monitoring, the small business owner should consistently analyse financial statements on a periodic basis, e.g. at end of the month. Even with a limited understanding of accounting, the owner can compare current financial statements to the prior period or to the budget in order to find unusual disparities, i.e. differences from the expected results. The disparities can be reported to the office manager to ensure that accounting is being handled correctly. The owner can also periodically compare current revenues and expenses to the prior period, again looking for disparities, and then investigate and dispute them. Finally, the small business owner should be familiar enough with the accounting software to periodically assess voids, deletions, adjustments, journal entries or other similar transactions that would allow the bookkeeper to commit fraud by covering up (e.g. deleting) transactions [12, p. 64]. The ACFE's global fraud study revealed the following: just 56% of organizations with fewer than 100 employees represented in the survey conducted external audits of their financial statements, compared to 91% of businesses with 100 or more employees; employees received fraud training in just 18.5% of the small organizations in the survey, compared to the share of almost six in 10 larger organizations; management verified financial statements in 43% of the small organizations in the survey, compared to 81% of the larger ones; formal codes of conduct existed in just 50% of organizations with fewer than 100 employees in the survey, compared to 90% of organizations with 100 or more employees [24, p. 39]. Small business owners must be proactive in monitoring the activities of their employees [6, p. 32]. When small businesses and start-up companies experience a fraudulent event, they may be hit disproportionately harder than larger organizations and have more difficulty absorbing the losses. For those companies, a significant fraud incident can harm their reputation, cost innocent employees their jobs, cause personal investments to be lost, and make creditors wary

of helping the victimized business in the future. Despite such threats, many small business executives underestimate their company's fraud risk [8, p. 20].

Research sample and methodology

Target population were SMEs in the Republic of Serbia. The research was conducted using a random sample of 43 respondents, one in each enterprise. Sample structure is shown in Table 1.

Table 1: Sample structure

Variables	Items	Frequency (n = 43)	Percentage
Position	General Manager	6	13.95
	Accounting and Finance Manager	22	51.16
	Other employees	15	34.89
Gender	Female	33	76.74
	Male	10	23.26
Education	Secondary school	3	6.98
	Higher school	6	13.95
	University (undergraduate)	30	69.77
	Other	4	9.30
Experience	Below 5 years	6	13.95
	Between 5 and 10 years	3	6.98
	More than 10 years	34	79.07
Industry	Manufacturing	19	44.19
	Trade	6	13.95
	Services	18	41.86
Size of enterprise	Small	18	41.86
	Medium-sized	25	58.14

Source: Authors' calculations.

The research was conducted in November 2018. The data were collected using a questionnaire, which was taken over from N'Guilla Sow et al. [17, pp. 514-517] to a great extent. The questionnaire was sent to 354 email addresses of randomly selected SMEs, but we received only 43 answers. This means that the response rate is only 12.15%, which is the main limitation of this research. The questionnaire contained four main sections (Appendix A). The first section of the questionnaire covered the respondent's profile (position in the enterprise, gender, education, experience, size and activity of the enterprise in which the respondent is employed). The second section covered 13 questions on the degree of implementation of fraud prevention measures in respondents' enterprises: 6 questions about building a culture of honesty and high ethical standards, 3 questions about evaluating anti-fraud processes and control and 4

questions about developing an appropriate monitoring process. In this regard, 3 variables in the research are the following: (1) average score for building a culture of honesty and high ethical standards, (2) average score for evaluating anti-fraud processes and control and (3) average score for developing an appropriate monitoring process. Respondents' perception of the effectiveness of the anti-fraud measures mentioned in the second section of the questionnaire was the topic of the third section (also 13 questions arranged in 3 groups and 3 variables). The fourth section of the questionnaire was related to the overall effectiveness of fraud prevention measures (3 questions). As in the case of the research of N'Guilla Sow et al. [17, p. 505], respondents provided answers on the basis of a four-point Likert scale. The collected data was processed using the IBM SPSS Statistics 20 and Microsoft Excel. We used the 0.01 and 0.05 significance levels (α) to determine statistical significance.

Before the analysis of the collected data, we tested for the presence of multivariate atypical values. The maximum value of the Mahalanobis distance in the sample was 12.8880 (minimum = 1.6390, mean = 5.8600, standard deviation = 2.6100), and the critical value was $\chi_{26;0,001} = 22.4577$. We concluded that there were no atypical values at the test level $\alpha = 0.001$ in the sample. In this regard, it can be concluded that the condition of multivariate normality was fulfilled. Afterwards, we examined the normality of all variables in all groups (Appendix B). The Shapiro-Wilk statistics was employed because the number of respondents (sample) was below 50. The null statistical hypothesis was that empirical distribution can be approximated to normal distribution. The alternative statistical hypothesis was that empirical distribution cannot be approximated to normal distribution. The area of accepting the null hypothesis was $p \geq \alpha$. The area of rejecting the null hypothesis and accepting the alternative one was $p < \alpha$ [11, p. 53]. The assumptions of normality are accepted in all of the observed groups, with the exception of (1) evaluating anti-fraud processes and control – perceived effectiveness and (2) building a culture of honesty and high ethical standards – higher school. According to these assumptions, statistical techniques for data processing were chosen. Since our data were measured using the ordinal

scale, we used nonparametric tests. In order to test the first hypothesis (H_1), we used the Wilcoxon signed-rank test. For testing of the $H_{2,1}$ and $H_{3,3}$ hypotheses, we used the Mann-Whitney U test, while to test the $H_{2,2}$, $H_{3,1}$ and $H_{3,2}$ hypotheses, we used the Kruskal-Wallis H test.

Results and discussion

Before the hypotheses testing, we analysed the existence of fraud prevention measures in Serbian SMEs. Table 2 shows the median and mode for each question from Section 2 of the questionnaire. The scale used in this section of the questionnaire ranges from 1 (not used at all) to 4 (frequently used).

Table 2: Existence of fraud prevention measures in Serbian SMEs

Existence of fraud prevention measures	Median	Mode
positive workplace environment	4.00	4.00
background checks of employees	3.00	3.00
taking consistent action in response to reported fraud cases	3.00	4.00
ethical tone at the top	3.00	3.00
management's attention to fraud risk	3.00	4.00
code of conduct	3.00	4.00
verification of accounts by professionals	3.00	4.00
regulation enforcement	3.00	3.00
internal control	3.00	3.00
employee involvement (whistle-blowing)	3.00	2.00
fraud risk assessment	2.00	2.00
internal audit	2.00	2.00
fraud awareness training	2.00	2.00

Source: Authors' calculations.

As shown in Table 2, the highest median is present in the case of building a positive workplace environment. This measure also has high mode. Additional analysis shows that 22 (51.16%) respondents opted for 4 and 14 (32.56%) respondents chose 3 in this question (fraud prevention measure). This means that building a positive workplace environment has been used or has frequently been used in 36 (83.72%) enterprises. This measure is also the best ranked one in the research of N'Guilla Sow et al. [17, p. 507]. Nine fraud prevention measures have the median of 3. However, in the case of taking consistent action in response to reported fraud cases, management's attention to fraud risk, code of conduct and verification of accounts by professionals, the most often given answer is

“frequently used” (mode = 4). On the other hand, three fraud prevention measures with the lowest medians and modes are fraud risk assessment, internal audit and fraud awareness training. Besides internal audit and fraud awareness training, the third fraud prevention measure with the lowest score in Malaysian SMEs is verification of accounts by professionals [17, p. 507]. Our findings are also consistent with the research conducted by Laufer [13, p. 401] who pointed out that anti-fraud measures are less present in SMEs than in large enterprises. He explains that larger organizations devote more resources to preventing fraud. Generally, internal control and employees’ involvement (whistle-blowing) also have low scores, because these measures have not been used at all or have rarely been used in 21 (48.84%) and 19 (44.19%) enterprises, respectively. These results are consistent with certain empirical research studies which indicate that the practice of internal control among small businesses is poor or weak [19, p. 214], [9, p. 34]. Kapp and Heslop [12, p. 62] also point out that internal control tends to be less prevalent in small businesses that have fewer employees. However, they indicate that there are a lot of internal control practices that can and should be implemented in SMEs to prevent fraud, even with staffing constraints [12, p. 64].

After the analysis of the existence of fraud prevention measures, we analysed their effectiveness in Serbian SMEs. Table 3 shows the median and mode for each question from Section 3 of the questionnaire. The scale used in this section of the questionnaire ranges from 1 (absolutely ineffective) to 4 (absolutely effective). The list of fraud prevention measures is the same as in Section 2. However, respondents were asked to score how they perceived the effectiveness of those measures in preventing fraud, regardless of their existence in their enterprises.

All fraud prevention measures have the same medians, whereas the mode is the same for twelve measures. Positive workplace environment and ethical tone at the top are measures which are effective or absolutely effective according to the opinion of 36 (83.72%) respondents, whereas code of conduct, taking consistent action in response to reported fraud cases and management’s attention to fraud risk are effective or absolutely effective according to the opinion of 34 (79.07%)

Table 3: Effectiveness of fraud prevention measures in Serbian SMEs

Effectiveness of fraud prevention measures	Median	Mode
positive workplace environment	3.00	3.00
taking consistent action in response to reported fraud cases	3.00	4.00
ethical tone at the top	3.00	3.00
management’s attention to fraud risk	3.00	3.00
code of conduct	3.00	3.00
background checks of employees	3.00	3.00
internal control	3.00	3.00
regulation enforcement	3.00	3.00
verification of accounts by professionals	3.00	3.00
employee involvement (whistle-blowing)	3.00	3.00
fraud risk assessment	3.00	3.00
internal audit	3.00	3.00
fraud awareness training	3.00	3.00

Source: Authors’ calculations.

respondents. In contrast, employee involvement (whistle-blowing), fraud risk assessment, internal audit and fraud awareness training are ineffective or absolutely ineffective measures according respondents’ answers (about 40% of respondents scored them with 1 or 2). As in the case of the previously quoted research of N’Guilla Sow et al. [17, p. 208], the measure of building a positive workplace environment received a high score regarding its existence and perceived effectiveness. However, it is interesting that the effectiveness of ethical tone at the top is highly ranked in Serbian SMEs, while it is next to last in Malaysian SMEs. Furthermore, in Serbian SMEs the effectiveness of internal audit did not get a high score. When it comes to internal audit in Serbian companies, the results are not surprising. Empirical research of Ljubicavljević and Jovanović [14, p. 139] indicates that the level of internal audit in Serbian companies does not correspond with the achieved level of development of that profession in the countries with developed market economies, because the management of most companies in the Republic of Serbia does not recognize the contribution of internal audit to the improvement of business quality and risk management. About 28% of respondents think that internal control is an ineffective or absolutely ineffective fraud prevention measure. It means that SMEs without internal control or without appropriate internal control should consider using new internal control practices or improving the existing ones in order to prevent and detect errors and/or fraud.

Testing the H_1 hypothesis. Comparative analysis of the existence and effectiveness of 13 fraud prevention measures in Serbian SMEs is presented in Figure 1. In the case of only one fraud prevention measure, the existence median is higher than the median of effectiveness (the dark line is above the bright line). The median of existence is equal to the median of effectiveness in nine measures. For three anti-fraud measures, the median of effectiveness is higher than the median of existence (the bright line is above the dark line). Further analysis was performed to determine whether the differences between the medians of responses on existence and effectiveness of 3 variables in the research (average scores for building a culture of honesty and high ethical standards, evaluating anti-fraud processes and control and developing an appropriate monitoring process) are significant or not.

For testing of the H_1 hypothesis, we used the Wilcoxon signed-rank test. The results thereof (Table 4) show that there is no statistically significant difference between (a) the existence and effectiveness of building a culture of honesty and high ethical standards and (b) the existence and effectiveness of developing an appropriate monitoring process. As regards building a culture of honesty and high ethical standards, the median of existence is higher than the median of effectiveness, whereas for developing an appropriate monitoring process the effectiveness median

is higher than the median of existence. However, those differences are not statistically significant. Nevertheless, there is a statistically significant difference between the existence and effectiveness of evaluating anti-fraud processes and control. This means that the effectiveness of evaluating anti-fraud processes and control is higher than its existence in Serbian SMEs, because the median of effectiveness is higher than the median of existence for the said variable. According to the Koens' criteria [20, p. 233], this difference is in the middle ($r = 0.317$).

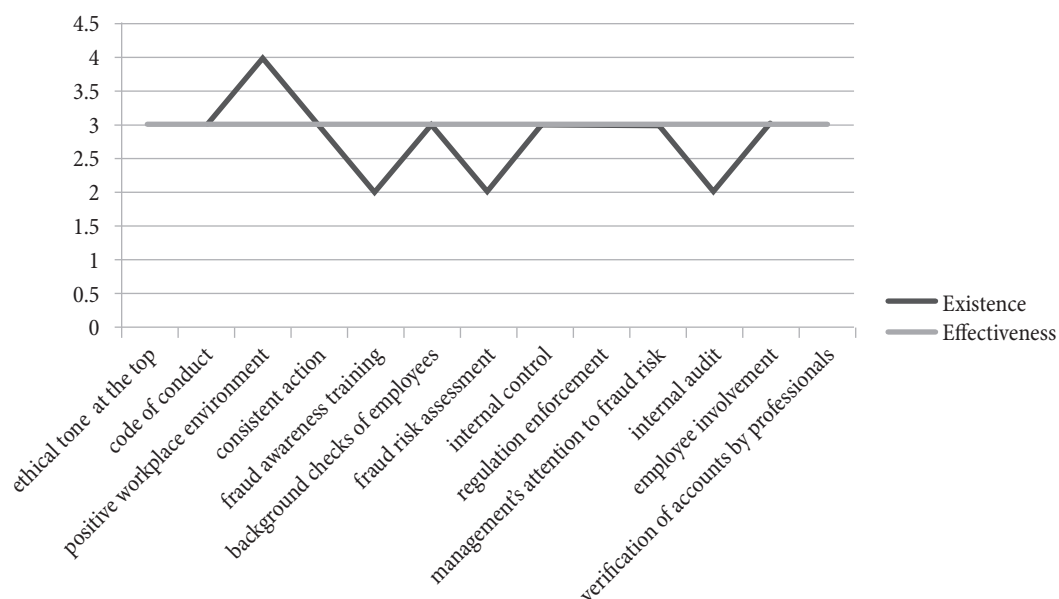
Table 4: Results of the Wilcoxon signed-rank test used for testing the difference between the existence and effectiveness of fraud prevention measures

Fraud prevention measures	Z	Sig.	r	Median of existence	Median of effectiveness
building a culture of honesty and high ethical standards	-0.530	0.596	0.057	3.170	3.000
evaluating anti-fraud processes and control	-2.941	0.003	0.317	2.670	3.000
developing an appropriate monitoring process	-1.687	0.092	0.182	2.750	3.000

Source: Authors' calculations.

Testing the $H_{2.1}$ hypothesis. For testing of the $H_{2.1}$ hypothesis, we used the Mann-Whitney U test. When we examined the influence of company size on the existence of fraud prevention measures in Serbian SMEs, we divided the sample into two groups. The first one included small

Figure 1: Existence vs. effectiveness of fraud prevention measures in Serbian SMEs (medians)



Source: Authors' calculations.

($n_1 = 18$) and the second included medium-sized enterprises ($n_2 = 25$). Table 5 shows the results of the Mann-Whitney U tests after examining whether company size influences the existence of the following fraud prevention measures: building a culture of honesty and high ethical standards, evaluating anti-fraud processes and control and developing an appropriate monitoring process. Furthermore, the results show that there is no significant difference in the existence of these measures between small and medium-sized enterprises. The differences between small and medium-sized enterprises are very small (see r values). However, if we observe the medians for all three variables from the aspect of company size, we can conclude that the medians are higher in medium-sized enterprises than in small ones for (a) evaluating anti-fraud processes and control and (b) developing an appropriate monitoring process. As regards building a culture of honesty and high ethical standards, the medians for small and medium-sized enterprises are equal. Regarding the internal control practice in the Republic of Serbia, as one of the most important fraud prevention measures, we singled out the research of Jovetić et al. [11, pp. 55-56]. They discussed the implementation of control activities from various aspects and found that there was some influence of company size on the implementation of control activities – average scores for some control activities (their existence in enterprises) were higher for medium-sized and large enterprises than for micro and small enterprises.

Testing the $H_{2,2}$ hypothesis. For testing of the $H_{2,2}$ hypothesis, we used the Kruskal-Wallis H test. When we examined the influence of industry on the existence of fraud prevention measures in Serbian SMEs, we divided the sample into three groups. The first group included manufacturing enterprises ($n_1 = 19$), the second included trade enterprises ($n_2 = 6$), while service enterprises ($n_3 =$

18) were in the third. The results of the Kruskal-Wallis H test (Table 6) indicate that there is no significant difference in the existence of anti-fraud measures between manufacturing, trade and service enterprises. If we observe the medians for all three variables from the aspect of industry, we can conclude that the medians are higher in the case of building a culture of honesty and high ethical standards than in the case of the other two variables; the medians are 3.17 (manufacture), 3.42 (trade) and 3.00 (services). Evaluating anti-fraud processes and control and developing an appropriate monitoring process are less applied in enterprises from all industries (medians range from 2.17 to 2.84). It can be assumed that a higher level of implementation of building a culture of honesty and high ethical standards compared with the other two variables is a consequence of obligation of many enterprises to establish an ethical code of conduct. On the other hand, it is much cheaper to establish and implement a culture of honesty and high ethical standards, because in order to establish anti-fraud processes and control and develop an appropriate monitoring process, many enterprises need to create special departments and sectors and employ and train new personnel. Given that the subject of this research are SMEs, lack of funding may be a limiting factor in the process of establishing the said measures. As for building a culture of honesty and high ethical standards and developing an appropriate monitoring process in trade enterprises, the medians are higher than in manufacturing and service enterprises because in trade enterprises there are fewer sectors and communication is better and easier. In that sense, it is easier to establish a culture of honesty and high ethical standards than in manufacturing enterprises. However, when it comes to evaluating anti-fraud processes and control, the medians in manufacturing and service enterprises are higher than

Table 5: Results of the Mann-Whitney U test – company size and existence of fraud prevention measures

Fraud prevention measures	Mann-Whitney U	Z	Sig.	r	Median for small enterprises	Median for medium-sized enterprises
building a culture of honesty and high ethical standards	197.000	-0.692	0.489	0.106	3.170	3.170
evaluating anti-fraud processes and control	186.500	-0.955	0.340	0.146	2.500	2.670
developing an appropriate monitoring process	208.500	-0.408	0.683	0.062	2.630	2.750

Source: Authors' calculations.

in trade enterprises, because in manufacturing enterprises there is a higher degree of control (both internal and external). That is why more attention is paid to evaluating anti-fraud processes and control.

Testing the $H_{3.1}$ hypothesis. For testing of the $H_{3.1}$ hypothesis, we used the Kruskal-Wallis H test. When we examined the influence of respondents' positions on the effectiveness of fraud prevention measures in Serbian SMEs, we divided the sample into three groups. The first group included general managers ($n_1 = 6$), the second included accounting and finance managers ($n_2 = 22$) and the third contained employees working in some other sectors in the enterprise ($n_3 = 15$). The significances obtained from the Kruskal-Wallis H test presented in Table 7 indicate that there is no significant difference in the effectiveness of fraud prevention measures between general managers, accounting and finance managers and employees working in other sectors in the enterprise. However, the medians for general managers with regard to (a) building a culture of honesty and high ethical standards and (b) developing an appropriate monitoring process are higher than those for accounting and finance managers and employees in some other sectors of the enterprise. In this sense, respondents' position influences their opinion about the effectiveness of anti-fraud measures. Unlike general managers, accounting and finance managers and employees working in some other sectors in the enterprise perform

operative tasks on a daily basis and have better insight into the effectiveness of these measures. That may be the reason they pay more attention to it. Better insight into the effectiveness of these measures could be the reason the median is higher for accounting and finance managers than for general managers when it comes to evaluating anti-fraud processes and control.

Testing the $H_{3.2}$ hypothesis. For testing of the $H_{3.2}$ hypothesis, we used the Kruskal-Wallis H test. In order to examine the influence of respondents' education on the effectiveness of fraud prevention measures in Serbian SMEs, we divided the sample into four groups (secondary school – $n_1 = 3$, higher school – $n_2 = 6$, university (undergraduate) – $n_3 = 30$ and other – $n_4 = 4$). The results of the Kruskal Wallis Tests (Table 8) show that education does not influence respondents' opinion about the effectiveness of fraud prevention measures. This means that there is no difference in respondents' opinion about the effectiveness of these measures regardless of their level of education. The median analysis shows that respondents with secondary school highly ranked the effectiveness of anti-fraud measures. There are only three respondents in this category, all of whom have work experience of more than 10 years, have more practical experience and are more aware of the effectiveness of these measures. The medians are also high in the category of other levels of education. In that category, there are several

Table 6: Results of the Kruskal-Wallis H test – industry and existence of fraud prevention measures

Fraud prevention measures	Chi-Square	df	Sig.	Median for manufacturing enterprises	Median for trade enterprises	Median for service enterprises
building a culture of honesty and high ethical standards	0.196	2	0.907	3.170	3.420	3.000
evaluating anti-fraud processes and control	0.565	2	0.754	2.670	2.170	2.840
developing an appropriate monitoring process	0.115	2	0.944	2.750	2.880	2.750

Source: Authors' calculations.

Table 7: Results of the Kruskal-Wallis H test – respondents' job titles and effectiveness of fraud prevention measures

Fraud prevention measures	Chi-Square	df	Sig.	Median for general managers	Median for accounting and finance managers	Median for employees from other sectors
building a culture of honesty and high ethical standards	0.390	2	0.823	3.250	2.920	3.000
evaluating anti-fraud processes and control	0.148	2	0.929	2.840	3.000	2.670
developing an appropriate monitoring process	0.713	2	0.700	3.130	3.000	3.000

Source: Authors' calculations.

respondents who completed master's and PhD studies. This is logical because more educated respondents have more knowledge about the benefits of different fraud prevention techniques.

Testing the $H_{3.3}$ hypothesis. For testing of the $H_{3.3}$ hypothesis, we used the Mann-Whitney U test. When we examined the influence of work experience on the effectiveness of fraud prevention measures in Serbian SMEs, we divided the sample into two groups. The first group included respondents with up to 10 years of experience ($n_1 = 9$), while the second comprised respondents with more than 10 years of work experience ($n_2 = 34$). The significances obtained after conducting the Mann-Whitney U tests (Table 9) show that work experience does not influence respondents' opinion about the effectiveness of fraud prevention measures. We concluded the same by observing the medians for both groups of respondents. This came as a slight surprise because we expected that respondents with more practical experience were more aware of the benefits of different fraud prevention techniques.

Section 4 of the questionnaire consists of 3 questions related to the overall effectiveness of fraud prevention measures. Respondents perceived the effectiveness of building a culture of honesty and high ethical standards, developing appropriate monitoring process and implementing effective internal control system as the same (medians and modes for all three variables amount to 3.00).

Conclusions

The analysis shows that there is no statistically significant difference between the existence and effectiveness of building a culture of honesty and high ethical standards and developing an appropriate monitoring process. However, there is a statistically significant difference between the existence and effectiveness of evaluating anti-fraud processes and control. This means that the first hypothesis (H_1) can be partially accepted and that there is some difference between the existence of anti-fraud measures and respondents' opinion about their effectiveness. In the case of three fraud prevention measures, the median of effectiveness is higher than the existence median, whereas for only one fraud prevention measure the median of existence is higher than the median of effectiveness. The median of existence is equal to that of effectiveness in nine fraud prevention measures.

The analysis of the influence of enterprise characteristics on the existence of fraud prevention measures shows that in that sense there is no significant difference between small and medium-sized enterprises. However, having observed the medians, we have revealed that the medians are higher in medium-sized enterprises than in small ones in the case of evaluating anti-fraud processes and control and developing an appropriate monitoring process. As regards building a culture of honesty and high ethical standards, the medians in small and medium-

Table 8: Results of the Kruskal-Wallis H test – respondents' education and effectiveness of fraud prevention measures

Fraud prevention measures	Chi-Square	df	Sig.	Median for secondary school	Median for higher school	Median for university (undergraduate)	Median for other
building a culture of honesty and high ethical standards	3.338	3	0.342	3.670	2.750	3.000	3.340
evaluating anti-fraud processes and control	3.672	3	0.299	3.670	2.670	3.000	3.340
developing an appropriate monitoring process	1.504	3	0.681	3.750	3.000	3.000	3.250

Source: Authors' calculations.

Table 9: Results of the Mann-Whitney U test – work experience and effectiveness of fraud prevention measures

Fraud prevention measures	Mann-Whitney U	Z	Sig.	r	Median for up to 10 years of experience	Median for more than 10 years of experience
building a culture of honesty and high ethical standards	145.500	-0.226	0.821	0.034	3.00	3.00
evaluating anti-fraud processes and control	149.000	-0.121	0.903	0.018	3.00	3.00
developing an appropriate monitoring process	133.500	-0.588	0.556	0.090	3.00	3.00

Source: Authors' calculations.

sized enterprises are equal. According to the previous results, we have concluded that the $H_{2,1}$ hypothesis can be partially accepted. This is consistent with the research of Jovetić et al. [11, p. 62] who found that the average scores of some control activities (their existence in enterprises) are higher for medium-sized and large enterprises than for micro and small enterprises. We have also found that there is no significant difference between the existence of fraud prevention measures in enterprises from different industries. The analysis of the medians for all three variables from the aspect of industry shows that in the case of building a culture of honesty and high ethical standards, the medians are mostly higher than for the other two variables. Generally, evaluating anti-fraud processes and control and developing an appropriate monitoring process are less applied in enterprises in all industries. We assumed that a higher level of implementation of building a culture of honesty and high ethical standards compared to the other two variables was the consequence of obligation of many enterprises to establish an ethical code of conduct. On the other hand, it is much cheaper to establish and implement a culture of honesty and high ethical standards. Lack of funding in SMEs may be a limiting factor in the process of establishing anti-fraud processes and control and developing an appropriate monitoring process. In the case of building a culture of honesty and high ethical standards and developing an appropriate monitoring process in trade enterprises, the medians are higher than in manufacturing and service enterprises, because in trade enterprises there are fewer sectors and communication is better and easier. However, when it comes to evaluating anti-fraud processes and control, the medians in manufacturing and service enterprises are higher than in trade enterprises, because there is a higher degree of control (both internal and external) in manufacturing enterprises. Accordingly, if enterprises differ in terms of business type, it has some influence on the existence of fraud prevention measures (the $H_{2,2}$ hypothesis can also be partially accepted). Finally, we have concluded that the characteristics of an enterprise (size and industry) have some influence on the existence of fraud prevention measures in Serbian SMEs.

The analysis of the influence of respondents' characteristics on the effectiveness of fraud prevention measures in Serbian SMEs shows that there is no significant difference in the effectiveness of fraud prevention measures between respondents depending on their position in the enterprise. However, additional analysis shows that the medians for general managers in case of (a) building a culture of honesty and high ethical standards and (b) developing an appropriate monitoring process are higher than those for accounting and finance managers and for employees in other sectors of the enterprise. In this sense, we have concluded that the job title of a respondent influences the opinion about the effectiveness of fraud prevention measures and that the $H_{3,1}$ hypothesis can be partially accepted. Unlike general managers, accounting and finance managers and employees working in other sectors of the enterprise perform operative tasks on a daily basis and have better insight into the effectiveness of fraud prevention measures than general managers. That may be the reason they pay more attention to the effectiveness of these measures. Better insight into the effectiveness of fraud prevention measures could be the reason the median is higher for accounting and finance managers than for general managers when it comes to evaluating anti-fraud processes and control. We have also found that there is no difference in opinion about the effectiveness of fraud prevention measures between respondents with different levels of education. However, the median analysis shows that respondents with secondary school (because of more than 10 years of work experience) and respondents who had completed master's and PhD studies (because they are better educated) ranked the effectiveness of fraud prevention measures higher than respondents with higher school and university (undergraduate). In this sense, $H_{3,2}$ can be partially accepted. Having tested the $H_{3,3}$ hypothesis, we have found that work experience does not significantly influence respondents' opinion about the effectiveness of fraud prevention measures. The analysis of medians also shows that there is no difference between respondents with more than 10 years of work experience and those with up to 10 years of experience. This means that the $H_{3,3}$ hypothesis can be accepted. This conclusion is slightly surprising, because we expected that respondents

with more practical experience were more aware of the benefits of different fraud prevention techniques. In accordance with the previous results, we have concluded that respondents' characteristics (job title and level of education) have some influence on their opinion about the effectiveness of fraud prevention measures in Serbian SMEs, unlike their work experience.

The main limitation of this research is the sample size. The willingness of target respondents to take part in the analysis was very low and collection of data through the questionnaire required large effort on the authors' side. Further research should be conducted so as to include more SMEs in the sample. Furthermore, it will be useful to include large enterprises into the analysis in order to compare fraud prevention measures in large enterprises and SMEs, not only in the Republic of Serbia, but in other countries as well. Closed-type questions in the questionnaire require a high level of estimation by respondents, especially for questions about their opinion on the effectiveness of fraud prevention measures. No questionnaire can cover all relevant segments of fraud prevention measures. In future, researchers should consider using some other data collection techniques (for example, observation and interviewing).

References

- Adams, G. W., Campbell, D. R., Campbell, M., & Rose, M. P. (2006). Fraud prevention. *The CPA Journal*, 76(1), 56-58.
- Albrecht, S., & Albrecht, C. (2004). *Fraud examination and prevention*. Ohio: Thomson-South-Western.
- Alzeban, A. (2019). The relationship between internal control and internal audit recommendations. *Spanish Journal of Finance and Accounting / Revista Española de Financiación y Contabilidad*, 48(3), 341-362.
- Association of Certified Fraud Examiners (ACFE). (2012). *Report to the nations on occupational fraud and abuse*. Retrieved 25 December 2018 from https://www.acfe.com/uploadedfiles/acfe_website/content/rtn/2012-report-to-nations.pdf.
- Bierstaker, J. L., Brody, R. G. & Pacini, C. (2006). Accountants' perceptions regarding fraud detection and prevention methods. *Managerial Auditing Journal*, 21(5), 520-535.
- Daigle R., Morris, P., & Hayes, D. (2009). Small businesses - Know thy enemy and their methods. *The CPA Journal*, 79(10), 30-37.
- Dimitrijević, D. (2018) *Forenzičko računovodstvo – instrument otkrivanja i sprečavanja prevara*. Kragujevac: Ekonomski fakultet Univerziteta u Kragujevcu.
- Gilmore-Allen, A. (2015). Tech fraud and the small business. *Internal Auditor*, 72(1), 20-21.
- Gramling, A. A., Hermanson, D. R., Hermanson, H. M., & Ye, Z. (2010). Addressing problems with the segregation of duties in smaller companies. *The CPA Journal*, 80(1), 30-34.
- Johnson, G., & Rudesill, C. (2001). An investigation into fraud prevention and detection of small businesses in the United States: Responsibilities, managers and business owners. *Accounting Forum*, 25(1), 56-78.
- Jovetić, S., Ljubisavljević, S., & Karapavlović, N. (2017). Primena kontrolnih aktivnosti u preduzećima u Republici Srbiji. *Megatrend revija*, 14(2), 43-72.
- Kapp, L., & Heslop, G. (2011). Protecting small businesses from fraud. *The CPA Journal*, 81(10), 62-67.
- Laufer, D. (2011). Small entrepreneurs: A focus on fraud risk and prevention. *American Journal of Economics and Business Administration*. 3(2), 401-404.
- Ljubisavljević, S., & Jovanović, D. (2011). Empirical research on the internal audit position of companies in Serbia. *Economic Annals*, 56(191), 123-141.
- Ljubisavljević, S., & Jovković, B. (2016). *Revizija finansijskih izveštaja*. Kragujevac: Univerzitet u Kragujevcu, Ekonomski fakultet.
- Malinić, D., Milićević, V., & Glišić, M. (2014). Interdependence of enterprise size and vitality in Serbian economy. *Ekonomika preduzeća*, 62(7-8), 323-347.
- N'Guilla Sow, A., Basiruddin, R., Mohammad, J., & Zaleha Abdul Rasid, S. (2018). Fraud prevention in Malaysian small and medium enterprises (SMEs). *Journal of Financial Crime*, 25(2), 499-517.
- Omar, N., & Abu Bakar, K. M. (2012). Fraud prevention mechanisms of Malaysian government-linked companies: An assessment of existence and effectiveness. *Journal of Modern Accounting and Auditing*, 8(1), 15-31.
- Oseifuah, E. K., & Gyekye, A. B. (2013). Internal control in small and microenterprises in the Vhembe District, Limpopo Province, South Africa. *European Scientific Journal*, 9(4), 241-251.
- Pallant, J. (2011). *SPSS, Priručnik za preživljavanje*. Beograd: Mikro knjiga.
- Shanmugam, J. K., Haat, M. H. C., & Ali, A. (2012). An exploratory study of internal control and fraud prevention measures in SMEs. *International Journal of Business Research and Management*, 3(2), 90-99.
- Singleton, T., Singleton, A., Bologna, J., & Lindquist, R. (2006). *Fraud auditing and forensic accounting*. New York: John Wiley & Sons.
- Stefanović, R. (2000). Sprečavanje i otkrivanje lažnog finansijskog izveštavanja. *Računovodstvo*, 45(11), 3-11.
- Tysiac, K. (2012). Small business, big risk. *Journal of Accountancy*, 214(2), 38-43.
- Wells, J. (2003). Protect small business. *Journal of Accountancy*, 195(3), 26-32.



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