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CORPORATE FRAUD RISKS IN SERBIA: PERCEPTIONS OF TOP AND MIDDLE MANAGEMENT

Abstract

Numerous internal and external fraud risks have been documented in both academic and professional literature. This research aimed to investigate how top and middle management in Serbia perceive these risks. The study surveyed a total of 191 participants from various industries, including 90 individuals holding top or middle management positions. The remaining respondents were employees or specialists without managerial roles, or those occupying lower-level management positions.

Findings revealed statistically significant differences between top and middle management and other respondents across several key areas: perceptions of the likelihood of fraud perpetrated by external actors; assessments of the probability that their organization would encounter specific types of fraud within the next two years; evaluations of the vulnerability of certain processes and activities to fraud risk; and the identification of factors believed to contribute to fraudulent behavior. Significant differences also emerged in their views on the roles of various actors in strengthening fraud risk management in the future, with additional variations within the top and middle management group itself—primarily based on gender, and secondarily on company ownership (foreign vs. domestic) and company size.

Keywords: corporate fraud, top management, middle management, fraud perception, Serbia

JEL Classification: L20, M10, M20, M30

Introduction

Recent global statistics clearly show a significant rise in registered corporate fraud cases. This raises an essential question: Is fraud more prevalent today, or were we simply less aware of it in the past? The reality is that a larger global population inevitably leads to an increased number of potential fraudsters. Furthermore, the expanding array of opportunities and the heightened complexity of today's business environment undeniably provide greater incentives and avenues for fraud.

The issue of fraud is intriguing and very delicate for many reasons. By its very nature, it should attract the interest of a wide range of researchers and constitute the subject of numerous studies. Why, then, do we know so little about it? From the corporate perspective, fraud can be found as management's incompetence or negligence, managerial unethical conduct, lack of diligence by controllers, inadequate/underdeveloped policies and procedures for risk detection and management, easy targets (victims), and so on. Understandably, a company would rather not disclose such information. It is also clear that perpetrators of fraud are even less interested in such information being published. Does that mean these events should be swept under the rug, treated as a business secret, and completely ignored? Does concealing such information represent a proper and fair approach? And who benefits from that?

According to the Association of Certified Fraud Examiners (ACFE), fraud is defined as "any intentional or deliberate act to deprive another of property or money by guile, deception, or other unfair means." Although boundaries sometimes may be blurred, a distinction is made between corruption, asset misappropriation, and fraudulent reporting (ACFE, 2024).

There are numerous classifications of fraud types. Frauds may be directed at individuals or at organizations. This paper focuses on the latter - that is, corporate fraud. Within corporate fraud, a distinction is drawn between internal and external fraud, depending on the origin of the perpetrator. The first type includes fraudulent acts committed by organizational insiders, such as employees and management. At the same time, external fraud encompasses a much broader spectrum of external stakeholders, such as business partners (suppliers, distributors, clients), as well as other actors, such as hackers, organized crime, and so forth.

This study builds upon previous research regarding the perceptions of managers and employees about corporate fraud in Serbia (Veljković & Kuč, 2024). It aims to enhance the understanding of this significant issue from the viewpoints of individuals who encounter these risks in their day-to-day operations and strategic decision-making.

1. Overview of empirical studies

The most comprehensive global research on fraud is conducted by the ACFE. The latest available report, published in 2024, covered 138 countries and revealed significant findings. According to the report, organizations lose an estimated 5% of their annual revenue to fraud, with the median loss per case amounting to \$145,000. Asset misappropriation schemes are the most frequent type

of fraud (89% of cases), yet they tend to be the least costly. In contrast, financial statement frauds are the rarest but also the most expensive, with nearly half of all reported cases involving corruption. A typical fraud case lasts for 12 months before being detected (ACFE, 2024). The typical fraudster is a male between 36 and 55 years of age, who is highly respected and has long tenure within the organization (KPMG, 2025).

Valuable evidence on this topic derives from studies undertaken by major international consulting and auditing firms (the Big Four) that specialize in providing forensic services. The findings often differ significantly across regions. In the United Kingdom, growing concern exists across both the public and private sectors that fraud has reached unprecedented levels. Professional criminals are the most frequent perpetrators of fraud, followed by insiders - among whom managers are more commonly involved than employees (KPMG UK, 2025). In contrast, findings from India indicate that most frauds are committed by lower- and middle-level management, while senior management and external actors are significantly less represented as perpetrators (Deloitte India, 2020). Whereas consumer fraud is relatively rare in the United Kingdom, PwC's global study shows that it ranks second among external fraud types (29%), just behind cybercrime (31%), which is the most prevalent; other external perpetrators include organized crime (28%), suppliers (20%), and others (PwC, 2022).

Although fraud is a global issue, most extant studies originate from developed economies, with a high level of collaboration amongst scholars in these countries. A bibliometric analysis of 7,750 Scopus-indexed publications on corporate fraud research from 1957 to 2022 revealed that the academic literature on corporate fraud has predominantly focused on identifying its determinants and examining its association with corruption (Owusu, Koomson & Donkor, 2024).

Several studies from various countries have investigated whether the gender of senior managers affects the risk of corporate fraud. ACFE global research (2024) found that male perpetrators outnumber female perpetrators by nearly three to one and cause median losses that are 58% higher than those caused by female perpetrators. Companies with women in executive positions tend to have a lower risk of corporate fraud, greater risk aversion, enhanced transparency, and higher levels of ethical behavior. For instance, a study conducted in the Czech Republic found that female CEOs tend to view business ethics as more important than their male counterparts (Procházková & Mičák, 2023). Similarly, research in Vietnam revealed that companies led by female CEOs are associated with reduced risk-taking and increased profits (Vo et al., 2023). Additionally, a study in China examined the influence of CFO gender on corporate fraud related to financial reporting. The results showed that companies

with female CFOs are less likely to engage in risky and unethical fraudulent activities compared to those led by male CFOs (J.-h. Luo et al., 2020).

Ownership structure significantly affects corporate governance and the risk of fraud. Liang, Liu, and Wang (2022) found that foreign investment in Chinese firms leads to a notable reduction in fraudulent activities. They suggest that foreign investors, especially from countries with strong investor protections, effectively monitor management, enhancing transparency and accountability. Utomo and Mawardi (2024) examine the effects of ownership structure and firm size on financial fraud in manufacturing companies listed on the Indonesia Stock Exchange. Their findings indicate that ownership structure significantly influences fraud, with domestic ownership associated with higher fraud risk. In contrast, foreign ownership provides stronger monitoring and supervision, reducing the likelihood of fraudulent activities. Additionally, larger firms are less likely to engage in fraud, as greater company size is linked to better-quality financial reporting and stronger internal controls, which minimize opportunities for manipulation.

Most studies on corporate fraud primarily focus on large companies. However, due to unique factors such as market position, company size, organizational structure, and resource availability, some researchers have turned their attention to small and medium-sized enterprises (SMEs). For example, research conducted in Malaysia involved interviews with 126 managers from SMEs to identify the key drivers of fraud prevention. It was found that a culture of integrity, anti-fraud controls/processes, and oversight functions is positively and significantly associated with effective fraud prevention in Malaysian SMEs (Mohammad, Basiruddin, and Rasid, 2018). Hossain (2025) investigates the role of internal control systems (ICS) in preventing financial fraud in SMEs in Bangladesh. The study shows a strong inverse relationship between the effectiveness of ICS and the occurrence of fraud, indicating that robust control mechanisms significantly reduce both the likelihood and impact of fraudulent activities. Key components, such as segregation of duties and monitoring processes, are highlighted as the most effective in preventing fraud. Other elements, such as risk assessments and communication strategies, also aid in fraud prevention, but to a lesser extent.

The scarcity of information and empirical research on fraud in less developed and developing countries can largely be attributed to the underdeveloped financial market and, consequently, to the lack of pressure for transparency in business operations and the absence of advanced corporate governance. Ultimately, the absence of the rule of law and strong and independent institutions, together with insufficient promotion of good practices

and weak sanctioning of poor practices, creates fertile ground for various fraudulent activities.

Deeply rooted and widespread corruption represents one of the chronic problems of Serbia's economy. Although it is often apparent to the naked eye, as evidenced by months-long mass protests, the problem is also underscored by international institutional indicators, which consistently point to a worsening trend. According to the 2025 Index of Economic Freedom, Serbia's ranking dropped from 60th to 64th among 178 countries, primarily due to inadequate institutional reforms aimed at reducing corruption and strengthening a judicial system that continues to be exposed to political interference (The Heritage Foundation, 2025). Furthermore, the Corruption Perceptions Index (CPI) 2024, released in early 2025, places Serbia at 105th out of 180 countries, one point lower than the previous year's score, marking its worst performance since the current methodology was introduced in 2012. Serbia now ranks alongside Ukraine (Transparency International, 2025).

Public procurement in Serbia has been recognized as an area with high corruption risks. A study analyzing 54 procurement procedures annulled in Serbia in 2021 and 2022 identified a range of risk indicators in different stages of the public procurement process (Pantelić & Živanović, 2024). The results show that the most prevalent indicator of possible misconduct is the vague and contradictory content of tender documentation, followed by irregularities during the bid opening and expert evaluation stages. A recent survey of managers in Serbia's public and private sectors revealed that integrity violations are more common in the public sector. However, levels of inefficiency and favoritism are similar in both sectors (Jelovac & Šuleić, 2025).

Forensic accounting resources play an important role in the fight against fraud. In Serbia, the development of forensic accounting capacities is still in its early stages. A survey of external auditors in Serbia revealed a strong professional awareness of the need to involve forensic accountants in external audits, as well as to simultaneously enhance auditors' own competencies in the field of fraud detection (Vučković Milutinović & Ribić, 2024).

The study conducted in Serbia in 2024, on a sample of 120 respondents in both managerial (59.2%) and non-managerial (40.8%) positions, revealed a low level of awareness regarding the frequency and trends in fraud cases (Veljković & Kuč, 2024). Approximately 60% of respondents could not answer whether the number of frauds in the past two years had increased, stagnated, or decreased. It is particularly noteworthy that this lack of awareness was equally present across different managerial levels as well as among employees. It is diffi-

cult to believe that any of us would not be interested in knowing how often, to what extent, and in what ways fraudsters might target our work. A lack of knowledge and awareness may stem not only from the absence of available information but also from the absence of education on this important issue. The study also showed that most respondents (60.8%) believe that fraud is equally likely to be committed by internal and external actors. In comparison, 34.2% view insiders as the greater threat, and only 5.0% perceive external actors as the greater threat. Furthermore, the perceived probability of fraud risk was positively correlated with hierarchical level, leading respondents to identify the highest level of management as being most exposed, where the potential damage is most significant. Among external actors, hackers, organized crime, and competitors were perceived as the most serious threats. The prevailing perception is that all employees, not only management, are responsible for detecting fraud. However, the primary role in detection is attributed first to internal audit, and only thereafter to external audit.

2. Methodology and sample

This study investigates how top and middle managers (senior managers) perceive the occurrence of fraud, key actors involved, organizational vulnerabilities, and governance mechanisms. Accordingly, the following research questions have been formulated:

- RQ1: How do senior managers perceive the occurrence of corporate fraud in their industry, and what trends do they anticipate for the future?
- RQ2: Which internal and external actors are perceived as most likely to commit fraud within organizations?
- RQ3: What types of fraud may the organization experience in the near future?
- RQ4: Which organizational processes are considered most vulnerable to fraud risks?
- RQ5: How effectively do organizations employ the current fraud risk management frameworks?
- RQ6: What are the key drivers of fraud?
- RQ7: Which stakeholders are seen as most capable of enhancing fraud risk management?

The research was conducted from May to July 2024. Drawing on a range of prior studies presented in the first section, conducted in various contexts, both within academic literature and by research agencies and consulting firms, a survey instrument was developed. Its clarity and comprehensibility were

pre-tested before distribution to respondents. The survey was designed to capture attitudes related to the types, methods, and perceived likelihood of corporate fraud occurrence.

The first part of the questionnaire collected data on the business demographics of the respondents and their companies. Key questions focused on the respondents' gender, age, years of work experience, hierarchical position, and sector of employment, as well as the primary industry of the company, ownership structure, and company size.

Following this, the survey included questions and statements aimed at assessing respondents' attitudes and awareness regarding corporate fraud, both in their industry and within their own company. This included considerations of fraud initiated internally and externally. The questionnaire mostly contained closed-ended questions, with the option for respondents to provide additional comments. For selected questions, five-point and seven-point Likert scales were applied.

The analysis primarily focused on top and middle managers in Serbian companies, with comparisons made to the responses of others (first-line managers, specialists, and employees). Additionally, within the senior management group, the analysis examined differences in responses based on gender, ownership structure, and company size, ensuring that each subgroup analysed included a minimum of 30 respondents. Data were analyzed using SPSS v25, employing descriptive statistics, correlation analyses, and inferential tests, primarily independent-samples t-tests, to determine statistical significance at the conventional alpha threshold of $p < 0.05$.

A total of 494 potential respondents were approached via the LinkedIn social network. Over the three-month data collection period, 191 valid responses were obtained. This represents a response rate of 38.7%, which is considered relatively high when compared to similar studies of this type.

Table 1 presents the sample structure. Statistically significant differences were observed in terms of respondents' age and years of professional experience. As expected, individuals occupying higher managerial positions tended to be older and more experienced, reflecting the time required to advance within the corporate hierarchy. While the gender distribution among senior managers was balanced, the proportion of women was lower than the overall sample average and considerably below the proportion observed among employees, specialists, and first-line managers. Regarding company size and ownership structure, no statistically significant differences were found between the two groups of respondents.

Table 1: Sample characteristics

	Senior managers (Top and Middle management)	Others (Employees, Specialists, or Lower-level management)	Whole sample
Total	90	101	191
Age			
Up to 30	18	56	74
31-40	30	34	64
41-50	31	9	40
Over 50 years	11	2	13
Work experience			
Up to 5 years	10	52	62
6–10 years	22	32	54
11–15 years	25	6	31
16–20 years	13	7	20
Over 20 years	20	4	24
Gender			
Female	45	77	122
Male	45	24	69
Size of the company			
Small	20	17	37
Medium	31	28	59
Large	39	56	95
Type of company by ownership			
Foreign (51–100% foreign ownership)	51	61	112
Domestic (51–100% domestic ownership)	39	40	79

Source: Author's research

Focusing on the subsample of 90 middle and top managers, several noteworthy patterns emerged. The gender distribution was equal, and the number of respondents below and above the age of 40 was nearly identical. Years of profe-

ssional experience were relatively evenly distributed, with the smallest proportion represented by those with up to five years of tenure. The dominant categories included respondents with 11–15 years of experience, followed by those with 6–10 years and more than 20 years, then those with 16–20 years, and, as expected, the fewest with less than five years of experience. Finally, company size showed a similarly balanced distribution, with a slightly higher representation from foreign-owned firms, which is consistent with the overall sample distribution.

3. Results and discussion

According to the research questions presented, the analysis of the results focuses on the following topics, which will be elaborated below:

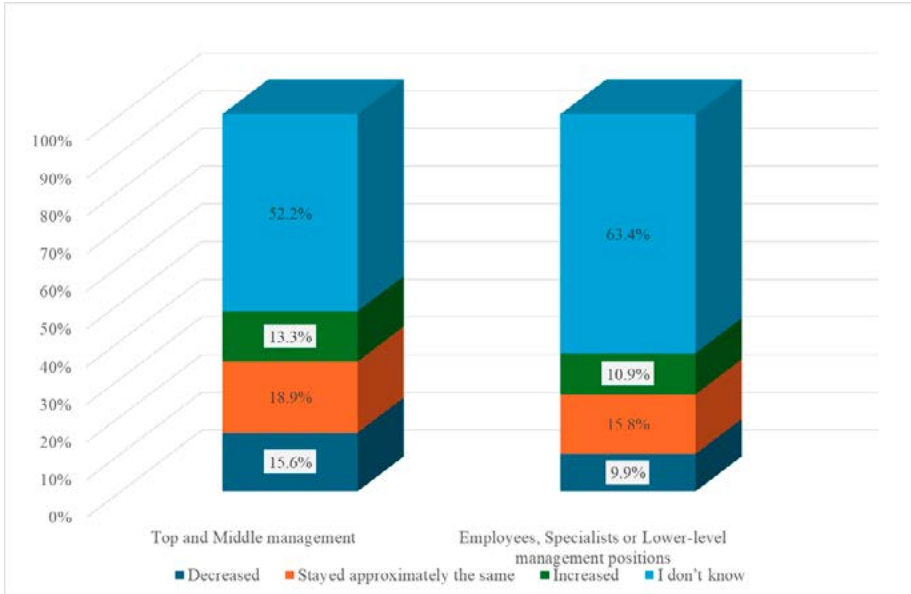
- Perception of the number of frauds in the branch in the recent past and assessment of trends (RQ1)
- Perceptions of which internal and external actors are most likely to commit fraud (RQ2)
- Perception of the types of fraud that the organization may experience in the near future (RQ3)
- Vulnerability of organizational processes to fraud risks (RQ4)
- Effectiveness of organizations' existing fraud risk management frameworks (RQ5)
- Perceived drivers of fraud (RQ6)
- Stakeholders who could enhance fraud risk management (RQ7)

Perception of the number of frauds in the branch in the recent past and assessment of trends

The study examined respondents' perceptions regarding the prevalence of fraud in the industries where their companies operate, both over the past two years and in relation to expectations for the upcoming two-year period.

Most respondents in both groups (Senior managers and Others) indicated that, in the past two years, no significant changes occurred, while a somewhat smaller proportion reported either an increase or a decrease in the number of fraud cases (Figure 1). However, notable differences emerged in the proportion of respondents unable to provide an assessment (52.2%) in the senior managers group compared to the others (63.4%). This discrepancy is understandable, as higher-level management typically has greater insight into company operations and industry dynamics.

Figure 1: Perceptions of the number of fraud cases in the industry/sector over the past two years



Source: Author's research

A closer examination of the senior managers group reveals additional insights when responses are broken down by gender, company size, and ownership structure. A statistically significant gender difference is evident: women showed substantially lower levels of awareness and/or exhibited greater caution in making assessments, with 62.2% selecting "I do not know," compared to 42.2% of men. Differences were also observed based on company size. Most senior managers' respondents from small enterprises (55.0%) were unable to provide an estimate, compared to 35.5% in medium-sized companies and 23.1% in large firms. This pattern suggests that larger companies, due to their greater resources and more developed information systems, procedures, and monitoring mechanisms, are better positioned to evaluate fraud trends within their industries.

Regarding projected losses from fraud in the next two years, just over one-third of the respondents among senior managers and nearly half of the respondents in the 'Others' group reported being unable to provide an estimate. Among those who did estimate, most senior managers expected losses of less than 1% of revenues. In contrast, the largest share of the comparison group anticipated losses in the range of 1–5% of revenues (Table 2).

Table 2: Estimated average loss due to fraud across companies in the industry over the next two years

	Less than 1% of revenue	1–5% of revenue	More than 5% of revenue	Cannot estimate
Senior managers	31.1%	26.7%	7.8%	34.4%
Others	17.8%	28.7%	5.9%	47.5%

Source: Author's research

Gender differences also emerged within the senior managers' group concerning expected fraud-related losses. Female respondents demonstrated greater caution and lower levels of certainty, with 46.7% unable to estimate expected losses, compared to 22.2% of male respondents. Among those who provided estimates, 54.2% of senior manager women projected losses of 1–5% of revenue, while 60% of senior manager men anticipated losses of less than 1%.

The patterns by company size are also interesting: senior managers from small businesses were the least able to estimate expected losses, with only 45% providing an estimate, compared to 64.5% in medium-sized companies and 76.9% in large firms. Ownership structure also influenced the ability to assess potential losses, with a higher proportion of respondents from foreign-owned companies (70.6%) providing estimates compared to 59% from domestically owned firms.

When it comes to the findings of other studies, it should be noted that there are very few investigations of trends (in terms of number and/or value) of corporate fraud at the country level. What further complicates comparisons is the fact that these studies differ substantially in terms of samples, data, time horizon, and methodology. For example, a study conducted in the United Kingdom shows an increase in the number (and decrease in overall value) of fraud cases over the past two years, specifically in 2023 and 2024 (KPMG UK, 2025). However, these figures refer to registered cases of fraud and factual data rather than people's perceptions. Moreover, the study covers only frauds with damage exceeding £100,000. This criterion provides a strong explanation for why customer fraud is reported at very low levels compared to fraud committed by other internal and external actors. In contrast, Deloitte's 2020 study in India, based on a perception survey, found that the vast majority of respondents (80.3%) expect the number of fraud cases to increase over the next two years, while 30.83% of respondents were unable to quantify average fraud losses of firms in their industries in the next two years (Deloitte India, 2020).

Perceptions of internal and external actors most likely to commit fraud

The results of the independent samples t-tests indicate that there are no statistically significant differences between senior managers and other employees regarding their perceptions of the likelihood that internal actors (top management, middle management, lower management, or specialists/non-managerial staff) might commit fraud. For top management, the mean scores were 3.16 for senior managers and 3.37 for others, showing no significant difference. The scores for middle management were also close, at 3.12 for senior managers and 3.21 for others, with no significant difference. In the case of lower management, there was a slight difference (2.84 in the group of senior managers vs. 2.93 in the group of others), but this difference was still not statistically significant ($t = -0.60$, $p = 0.55$). Lastly, the evaluation of specialists/non-managerial staff showed almost identical means (2.94 for senior managers vs. 2.95 for others), confirming no difference. Levene's test established that the assumption of equal variances was met for most comparisons, except for lower management ($p = 0.013$). However, even when adjusted, the t-test results remained non-significant. Findings in relevant studies on this matter differ. For example, some studies find that managers are more involved in fraud than employees (KPMG UK, 2025), while others identify lower-level managers as the primary perpetrators (Deloitte India, 2020). According to the ACFE global survey (2024), fraud committed by owners or executives accounted for 19% of cases. Still, they resulted in the highest median losses, with a median loss of USD 500,000, over eight times that of staff-level employees (USD 60,000) and nearly three times that of mid-level managers (USD 184,000). In contrast, fraud by employees and lower managers was more frequent, accounting for 37% and 41% of cases, respectively.

Table 3 compares the rankings of external actors perceived as most likely to commit fraud among senior managers and other employees, and with results from the PwC Global Survey (2022). In all three groups, hackers occupy the top position, highlighting the widespread recognition of cyber threats as the main external fraud risk. Similarly, organized crime groups consistently rank among the top three perceived threats across all contexts. However, there are notable differences when comparing Serbian respondents to the global benchmark. Both senior managers and other employees in Serbia rank competitors as the third most likely source of fraud, while globally, customers or buyers hold this position. Furthermore, Serbian respondents rate customers/buyers relatively low (in 6th to 7th position), whereas they are considered a primary risk category in the global context.

Another interesting pattern is observed in the mid-tier risks. In Serbia, agents/intermediaries and joint venture partners are viewed as moderately risky, whereas the global survey places more emphasis on suppliers and external service providers. This discrepancy may reflect structural differences in market dynamics, supply chain dependencies, and trust in intermediaries between Serbia and the global context. Lastly, consultants/advisors and foreign governments are consistently ranked as the least likely sources of fraud across all groups, indicating a consensus that these actors are perceived as less immediate threats.

Table 3: Probability that some of the external actors will commit fraud

Likelihood ranking	Senior managers (Serbia, 2024)	Others (Serbia, 2024)	PwC global (2022)
1	Hacker	Hacker	Hacker
2	Organised Crime	Organised Crime	Customer/ Buyer
3	Competitor	Competitor	Organised Crime
4	Agent or Intermediary	Joint Venture Alliance Partner	Supplier
5	Joint Venture Alliance Partner	Agent or Intermediary	Agent or Intermediary
6	Supplier	Customer/ Buyer	Competitor
7	Customer/ Buyer	Supplier	External Service Provider / Outsourcing
8	External Service Provider / Outsourcing	External Service Provider / Outsourcing	Joint Venture Alliance Partner
9	Consultant Advisor	Consultant Advisor	Consultant Advisor
10	Foreign Government	Foreign Government	Foreign Government

Source: Author's research and PWC (2022)

A comparative analysis was conducted to evaluate the perceptions of external actors as sources of fraud between senior managers and other employees, employing independent samples t-tests. The results revealed a few statistically significant differences. Notably, significant differences were found regarding hackers ($p = 0.024$) and organized crime groups ($p = 0.010$). In both cases, other employees perceived a higher likelihood of fraudulent activity ($M = 4.20$ for hackers and $M = 3.84$ for organized crime) compared to senior managers ($M = 3.79$ for hackers and $M = 3.27$ for organized crime).

These findings suggest that employees in non-managerial positions may have a heightened awareness of operational vulnerabilities and security risks, likely due

to their closer involvement in daily business processes. In contrast, senior managers seem to adopt a more optimistic or detached view of these threats. Despite statistically significant differences, the two actors in both categories of respondents were placed at the top in terms of the probability of committing fraud.

Additionally, marginal differences approaching statistical significance were noted for competitors ($p = 0.074$) and foreign governments ($p = 0.092$). In these instances, other employees also rated the probability of fraudulent activity slightly higher than senior managers, although these differences do not meet the conventional 0.05 significance threshold.

Additional analysis within the category of senior managers, dividing them by company size, origin of ownership, and gender, indicates only one statistically significant difference, namely that female senior managers perceive the threat of hacker fraud at a significantly higher level than men.

Perception of the types of fraud that the organization may experience

Regarding fraud, irregularities, and/or abuses that respondents believe their organization may face over the next two years, cybercrime (including data theft, intellectual property theft, etc.) ranks highest. As many as 40.3% of respondents indicated an above-average likelihood of this type of fraud occurring in the near future. In the next group, based on perceived probability, are biases toward suppliers/customers/business partners, misuse of confidential information, insider trading and espionage, and bribery and corruption, noted by slightly more than a third of respondents (34%), followed closely by inadequate financial reporting (29.8%). A significantly smaller number of respondents perceive a high likelihood of risk from regulatory non-compliance, fraud related to the use of artificial intelligence and related technologies, fraudulent business valuation, supply chain fraud (including counterfeiting and inventory theft), asset theft and money laundering, and consumer fraud. In line with these results, the fraud schemes that are most likely to be experienced in the future, according to the Deloitte India report (2020), include cybercrimes, vendor/business partner favoritism, bribery and corruption, and supply chain fraud, including counterfeiting and inventory pilferage.

Upon closer examination, the group statistics and independent samples t-tests reveal significant differences in perceptions of certain types of corporate fraud between senior managers and other employees. Senior managers consistently report lower mean scores compared to other employees across most fraud categories. Notably, statistically significant differences were observed for inadequate financial reporting ($t = -2.669$, $p = 0.008$), misuse of confidential information, insider trading, and espionage ($t = -2.152$, $p = 0.033$), asset theft and

money laundering ($t = -2.414$, $p = 0.017$), regulatory non-compliance ($t = -2.125$, $p = 0.035$), and fraudulent business valuation ($t = -3.496$, $p = 0.001$).

These results suggest that senior managers perceive these fraud types as less prevalent or less risky than other organizational members do.

Within the group of senior managers, the results from independent samples t-tests indicate significant differences in how managers from large companies and SMEs perceive the likelihood of various types of fraud.

Specifically, senior managers in large companies consistently view the risk of several fraud categories as higher, at a statistically significant level, compared to their counterparts in SMEs. The differences are observed in the following categories:

- Bribery and Corruption: Large-company managers assigned a higher likelihood of occurrence ($M = 2.95$) than SME managers ($M = 2.33$).
- Supply Chain Fraud, Counterfeiting, and Inventory Theft: Again, large-company managers perceived this risk more strongly ($M = 2.87$) compared to SME managers ($M = 1.86$).
- Bias Toward Suppliers, Customers, or Business Partners: This was rated higher by large-company managers ($M = 3.15$) than by SME managers ($M = 2.43$).
- Consumer Fraud: Large-company managers perceived a greater risk ($M = 2.38$) compared to SME managers ($M = 1.61$).

For other fraud categories, differences between senior managers of large companies and SMEs were not statistically significant.

These findings indicate that organizational **size** shapes perceptions of vulnerability to fraud. Senior managers in large companies appear to be more aware of the risks associated with complex supply chains, relationships with external stakeholders, and broader consumer interactions. In contrast, senior managers in SMEs typically perceive lower levels of fraud risk in these areas, potentially due to their more localized operations, simpler governance structures, and closer personal oversight.

When examining the ownership structures, a statistically significant difference is observed in relation to supply chain fraud, counterfeiting, and inventory theft. This type of fraud is more prevalent and ranks higher in companies with foreign ownership than in domestic ones. The likely explanation for this trend is the presence of longer supply chains and a greater level of international operations, as many partners are located outside of Serbia. As a result, the risks are higher compared to domestic companies, which generally have shorter supply chains and better knowledge of the local market.

Vulnerability of organizational processes to fraud risks

When asked to identify the business processes most vulnerable to fraud, senior managers highlighted supplier/partner selection and relationship management (28.9%) and procurement and supply chain management (26.7%) as top concerns. In contrast, lower-level managers, specialists, and non-managerial employees pointed to finance and accounting (32.7%) and IT (23.0%) as their primary areas of focus.

This divergence reflects distinct perspectives shaped by the roles within organizations. Senior managers, with responsibility for strategic partnerships, emphasized vulnerabilities in external relationships, consistent with research highlighting third-party risks as critical in modern supply chains (PwC, 2022; ACFE, 2024).

Effectiveness of organizations' existing fraud risk management frameworks

The opinions of respondents were examined regarding the effectiveness of their organizations' existing fraud risk management frameworks in identifying and mitigating potential internal and external fraud.

There were minimal differences in the assessments of organizational capacity to address internal and external fraud challenges when comparing responses from senior managers and other respondents. For internal fraud, senior managers rated their organizations at 3.36, while other respondents rated them at 3.28. For external fraud, the ratings were 3.34 for senior managers and 3.36 for other respondents.

However, notable differences emerged when analyzing specific groups within the category of senior managers. Senior managers in foreign-owned companies rated their organizations' preparedness to respond to external risks significantly higher than those in domestically owned companies, with scores of 3.67 compared to 2.92 on a 1–5 scale. A similar difference was found in the assessment of the ability to combat internal fraud, with foreign companies scoring 3.49 versus 3.18 for domestic companies. This finding is consistent with results from China and Indonesia (Liang, Liu, & Wang, 2022; Utomo & Mawardi, 2024), which indicate that foreign investment and ownership lead to lower corporate fraudulent activities due to stronger monitoring and supervision, as well as higher levels of transparency and accountability.

Additionally, senior managers from large companies rated their organizations' readiness to tackle challenges related to both internal and external fraud more favorably than their counterparts from small and medium-sized enterprises

(SMEs). The scores were 3.54 (large) compared to 3.22 (SMEs) for internal fraud and 3.54 (large) compared to 3.20 (SMEs) for external fraud, although these differences were not statistically significant.

These results align with the COSO Enterprise Risk Management framework (Committee of Sponsoring Organizations of the Treadway Commission - COSO, 2017), which emphasizes governance structures, resources, and risk oversight as determinants of effective risk mitigation. Larger and foreign-owned companies, often subject to stricter compliance regimes and equipped with more sophisticated risk controls, appear to embody COSO's principles more effectively than SMEs and domestically owned firms. The findings also correspond with research on corporate fraud and its prevention in SMEs in Malaysia and Bangladesh (Mohammad, Basiruddin, and Rasid, 2018; Hossain, 2025).

Perceived drivers of fraud

A special area of analysis was the drivers that can contribute to fraud in organizations. Both groups (see Table 4) identified insufficient communication and training, along with inadequate reporting mechanisms, as central drivers of fraud. However, senior managers placed greater emphasis on insufficient due diligence on employees and third parties (45.6% vs. 40.6%), while other respondents stressed reliance on static, outdated internal controls (46.5% vs. 32.2%).

Table 4: Perceived drivers of fraud

	Senior managers	Others
Unclear/irregular communication and training of employees on fraud, misconduct, and regulatory non-compliance	58.9%	61.4%
Inadequate mechanisms for reporting suspicious behavior	55.6%	49.5%
Asymmetric access to information, systems, and decision-making granted to only a few individuals	53.3%	51.5%
Insufficient due diligence on employees/third parties (partners, associates, etc.)	45.6%	40.6%
A reward system based on unrealistic targets	36.7%	37.6%
Limited understanding of new fraud risks that may result in gaps in the current risk management framework	35.6%	39.6%
Reliance on static, outdated internal controls	32.2%	46.5%
Lack of compliance with the code of conduct by senior management	25.6%	27.7%
Limited resources for building a robust fraud risk management system	21.1%	14.9%

Source: Author's research

These findings can be interpreted through the Fraud Diamond model (Wolfe & Hermanson, 2004), which extends the Fraud Triangle by adding “capability” as a critical element. From this perspective, inadequate due diligence heightens the capability of bad actors to exploit organizational blind spots, while outdated controls increase opportunity. Thus, both strategic and operational weaknesses contribute to heightened fraud risk, albeit in different ways.

Stakeholders for enhancing fraud risk management

respondents also evaluated the role of external stakeholders in strengthening fraud risk management. Both groups (Senior managers and Others) agreed on the importance of technology companies and IT experts (54.4% vs. 52.5%), underscoring the growing relevance of digital fraud detection tools. Senior managers emphasized independent managers/directors (40.0% vs. 29.7%), reflecting recognition of governance reforms. In comparison, other respondents highlighted external auditors (43.6% vs. 32.2%) and government institutions (27.7% vs. 17.8%), consistent with reliance on formal external oversight (Table 5).

Table 5: Stakeholders which could significantly improve the organization’s performance in managing fraud risks: Senior managers vs. Others

	Senior managers	Others
Technology companies / IT experts	54.4%	52.5%
Independent managers/directors	40.0%	29.7%
External auditors	32.2%	43.6%
Professional legal services	24.4%	31.7%
Government (police, prosecution, combating various forms of economic crime)	17.8%	27.7%
Forensic experts	13.3%	15.8%

Source: Author’s research

Table 6 presents senior managers’ perceptions of the stakeholders most likely to enhance organizational performance in managing fraud risks. The results highlight technology companies/IT experts as the most prominent group across all categories, with particularly high support from male respondents (60.0%) and managers in large enterprises (56.4%). This underscores the perceived centrality of technological expertise in combating fraud.

Table 6: Senior managers' perceptions of stakeholders that could significantly improve the organisation's performance in managing fraud risks

	Female	Male	MSE	Large	Foreign	Domestic
Professional legal services	26.7%	22.2%	29.4%	18.0%	21.6%	28.2%
Forensic experts	15.6%	11.1%	7.8%	20.5%	19.6%	5.1%
Technology companies / IT experts	48.9%	60.0%	52.9%	56.4%	54.9%	53.9%
Independent managers/directors	40.0%	40.0%	37.3%	43.6%	41.2%	38.5%
External auditors	40.0%	24.4%	31.4%	33.3%	33.3%	30.8%
Government (police, prosecution, combating economic crime)	24.4%	11.1%	19.6%	15.4%	13.7%	23.1%

Source: Author's research

A second tier of importance is attributed to independent managers/directors and external auditors. Both groups received balanced recognition, although external auditors were more highly valued by female respondents (40.0%) compared to their male counterparts (24.4%), suggesting gendered differences in trust toward traditional control mechanisms.

By contrast, professional legal services were cited by just over a quarter of respondents overall, with slightly stronger emphasis among managers from domestic enterprises (28.2%). Forensic experts received lower recognition, except in large (20.5%) and foreign-owned (19.6%) enterprises, which may reflect greater awareness of specialized investigative practices in more complex organizational settings.

Finally, government actors (e.g., police, prosecution) were generally seen as less significant, with relatively modest endorsement across all groups. This finding may indicate limited confidence in external regulatory or enforcement bodies as partners in organizational fraud risk management.

The help that women seek to a greater extent from outside (from government or external auditors) is associated with their greater aversion to risk and a higher level of business ethics, which has been confirmed in several studies (Procházková & Mičák, 2023; Vo et al., 2023).

Research in India indicates that various ecosystem players can significantly enhance Fraud Risk Management efforts. Respondents expressed a balanced perspective, identifying several key contributors: technology organizations that

aid in fraud prevention and prediction, forensic experts and law enforcement agencies involved in investigations, law firms that assist with fraud response and anti-fraud education, and independent directors responsible for fraud reporting (Deloitte India, 2020). In this sense, while raising awareness among managers and employees in Serbia about the importance of certain stakeholders in the fight against corporate fraud, it is necessary to distinguish between distinct phases (investigation, prevention, prediction, education, and reporting).

Conclusion and implications

This study offers new insights into how organizations in Serbia perceive fraud risks and assess their vulnerability. While most respondents indicated that there have been no significant changes in the prevalence of fraud over the past two years, a notable number, including senior managers, particularly women, those in small enterprises, and managers in domestically owned firms, could not provide clear assessments. This finding highlights ongoing gaps in fraud awareness and monitoring capacity, often related to organizational size, resources, and access to information systems.

Gender-based differences were evident. Female senior managers were more likely to either refrain from making assessments or anticipate higher losses related to fraud. This suggests greater caution but also hints at their potential exclusion from crucial information flows. Additionally, organizational size and ownership played a role in shaping perceptions. Managers in large, foreign-owned firms identified a wider range of external fraud risks, especially concerning supply chains, while those in small and domestically owned companies perceived a lower level of exposure.

Among all groups surveyed, cybercrime was recognized as the most likely fraud threat in the near future, followed by biases in business relationships, misuse of confidential information, insider trading, bribery, and inadequate financial reporting. Employees at lower hierarchical levels consistently rated cybercrime and organized crime as more pressing threats than senior managers did, reflecting their closer engagement with daily operations and their heightened awareness of vulnerabilities. These differences underscore how organizational roles and perspectives can shape risk perception.

Overall, the findings suggest that fraud risk management in Serbia is uneven across different types of organizations and managerial levels. Addressing these gaps necessitates targeted actions at both the policy and organizational levels.

The policy and managerial implications can be summarized in four key areas. First, systematic fraud awareness and training programs are essential, parti-

cularly for SMEs and domestically owned companies, with a special focus on reducing gendered information asymmetries. Second, developing standardized monitoring and reporting mechanisms would enhance organizations' ability to detect fraud trends and benchmark against peers. Third, given the prominence of cybercrime, firms should be incentivized to invest in advanced digital detection tools and IT security through shared platforms and partnerships. Finally, collaboration among companies, regulators, and law enforcement should be strengthened, including through public-private partnerships and specialized task forces, to combat organized crime and cyber-enabled fraud.

This study has several limitations that should be acknowledged. First, the findings rely on self-reported perceptions, which may be influenced by social desirability bias or limited access to information. Second, the sample is restricted to organizations operating in Serbia, which limits the generalizability of the results to broader regional or global contexts. Third, while the study included comparisons based on hierarchical levels and within the senior management group in terms of gender, company size, and ownership, it did not capture sectoral differences that may significantly influence perceptions of fraud risk.

Future research could address these limitations by combining perception-based surveys with objective data on detected fraud cases. Comparative studies across different countries or industries would help place the Serbian results within a broader context. Additionally, longitudinal designs could capture how perceptions of fraud evolve, particularly in response to regulatory reforms or technological changes.

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