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THE IMPORTANCE OF ESTABLISHING AND DEVELOPING INTERNAL AUDIT IN HIGHER EDUCATION INSTITUTIONS IN BOSNIA AND HERZEGOVINA

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Abstract: *Higher education in Bosnia and Herzegovina faces significant challenges related to transparency, accountability, and governance quality. In this context, the development of internal audit systems has become an important mechanism for strengthening institutional integrity and improving overall performance. Internal audit contributes to the efficiency of processes, transparency in financial management, and compliance with legal and strategic obligations. However, its implementation remains uneven, and its role is often insufficiently recognized or integrated into governance structures.This paper examines the importance of establishing and developing internal audit in higher education institutions in Bosnia and Herzegovina, focusing on key challenges, systemic shortcomings, and areas for improvement. The aim is to analyse how internal audit principles, risk management practices, and alignment with European standards can enhance governance quality in the higher education sector. The study is based on empirical research exploring employees' perceptions of the role and importance of internal audit, its impact on institutional performance, and the level of trust in internal processes. The findings indicate a high level of awareness regarding the importance of internal audit, but also reveal challenges that limit its full development. Key weaknesses point to the need for stronger human and institutional capacities, improved standardization, and better alignment with European requirements. Overall, the results confirm that strengthening the establishment and continuous development of internal audit can significantly enhance transparency, accountability, and long-term sustainability in higher education, providing a foundation for modernization and more effective governance.*

Keywords*: internal audit, higher education, risk management, transparency*

1. Introduction

The modern system of higher education is characterized by increased demands for accountable management of public funds, compliance with the regulatory framework, and continuous improvement of the quality of teaching and administrative processes (European Commission, 2021). In Bosnia and Herzegovina, higher education institutions operate in a complex institutional and normative environment, which further emphasizes the need for efficient systems of internal controls and risk management. Internal audit represents one of the fundamental instruments of modern public management (IIA, 2023). Its function goes beyond the traditional control of legality and regularity of operations and includes the assessment of efficiency, effectiveness, and economy of business processes (Arena & Azzone, 2009). In the context of higher education, internal audit has the potential to contribute to strategic management, cost rationalization, and the improvement of institutional integrity. Although the regulatory framework in Bosnia and Herzegovina recognizes the obligation to establish internal audit in the public sector, practice shows that its development is not uniform, nor is it always fully integrated into the management system of higher education institutions. Previous studies have mainly focused on internal audit in the general public sector, while limited attention has been devoted to its role and effectiveness in higher education institutions, particularly in Bosnia and Herzegovina. Therefore, this study aims to examine the significance of internal audit in improving governance, financial discipline, and risk management within higher education institutions. The research also seeks to assess perceptions of the effectiveness of internal audit and its contribution to institutional accountability and operational improvement.

2. Theoretical basis of the research

2.1. Concept and Development of Internal Audit

According to the definition of The Institute of Internal Auditors (IIA, 2020), internal audit is an independent and objective assurance and consulting activity designed to add value and improve organizational operations through systematic evaluation of risk management, control, and governance processes. Historically, internal audit has evolved from a function primarily focused on financial control to a strategic function encompassing (Arena & Azzone, 2009):

- risk management assessment,
- evaluation of corporate governance,
- analysis of business process efficiency,
- advisory activities aimed at improving organizational performance.

The modern approach to internal audit is based on international professional standards, particularly the International Professional Practices Framework (IPPF), which emphasizes independence, objectivity, competence, and ethical conduct (Institute of Internal Auditors, 2023). In higher education institutions, internal audit plays a key role in ensuring accountability, transparency, and effective governance of public resources.

2.2. Internal Audit and the System of Financial Management and Control

Internal audit is an integral part of the financial management and control system, developed within the concept of Public Internal Financial Control (PIFC), promoted by the European Commission (European Commission, 2015). The PIFC framework is based on three pillars: financial management and control, internal audit, and central harmonization units. This system aims to strengthen managerial accountability for the use of public funds, while internal audit provides independent assurance on the effectiveness of control systems. In higher education institutions, this implies that management is responsible for establishing adequate internal controls, while internal audit evaluates their effectiveness and provides recommendations for improvement.

2.3. Specific Features of Internal Audit in Higher Education Institutions

Higher education institutions have a specific organizational structure characterized by (OECD, 2022):

- academic autonomy,
- decentralized decision-making,
- a combination of budgetary and own-source revenues,
- complex administrative and teaching processes.

In such an environment, internal audit must adopt a multidisciplinary approach and understand the specificities of the academic system.

Universities generally operate through organizational units (faculties, institutes, centers) that have a certain degree of financial and organizational autonomy. This increases the need for a coordinated and systematic approach to risk management (Sarens & De Beelde, 2006).

Key areas of audit interest in higher education institutions include:

- budget management and own-source revenues,
- public procurement,
- project management and international grants,

- recruitment and promotion of academic staff,
- asset and infrastructure management,
- the teaching delivery process,
- IT processes,
- scientific research activities.

These characteristics make internal audit particularly important in higher education institutions, where effective governance and risk management are essential for institutional performance.

2.4. Internal Audit and Risk Management in Higher Education

The modern concept of internal audit is closely linked to risk management. Risk management implies a systematic process of identifying, assessing, and mitigating risks that may threaten the achievement of an institution's strategic objectives (Sarens & De Beelde, 2006).

In higher education, risks may include:

- financial risks (inadequate planning and spending of funds),
- reputational risks (compromising academic integrity),
- regulatory risks (non-compliance with legal regulations),
- operational risks (inefficient administrative processes).

Recent empirical and bibliometric evidence further highlights the interconnected role of internal audit, governance, and risk management in strengthening organizational resilience (Bulău et al., 2024). Through risk-based audits, internal audit contributes to the rational allocation of resources and strengthening institutional resilience. Therefore, risk-based internal audit is essential for improving decision-making processes and strengthening institutional resilience in higher education.

2.5. Challenges in the Development of Internal Audit in Bosnia and Herzegovina

The development of internal audit in Bosnia and Herzegovina faces numerous challenges, including (Ministry of Finance and Treasury of Bosnia and Herzegovina, 2021):

- insufficient human resource capacities,
- limited budgetary resources,
- formal but not substantive understanding of the role of internal audit,
- insufficient integration of internal audit recommendations into decision-making processes.

In some cases, internal audit is still perceived as a control mechanism rather than a strategic partner of management. Such an approach limits its full developmental potential. Further development of internal audit requires (Transparency International BiH, 2020):

- continuous education of internal auditors,
- strengthening institutional independence,
- improving cooperation with management,
- alignment with European standards and practices.

2.6. Research Gap and Aim of the Study

Despite the increasing importance of internal audit in the public sector, limited research has examined its specific role within higher education institutions in Bosnia and Herzegovina, particularly in relation to governance, financial discipline, and risk management. Existing studies mainly focus on internal audit in the broader public sector, while universities as complex organizational systems remain insufficiently explored. This research gap highlights the need for a more detailed analysis of the contribution of internal audit to governance, financial discipline, and risk management in higher education institutions. Therefore, the aim of this study is to examine the role and significance of internal audit in improving governance, financial discipline, and risk management in higher education institutions in Bosnia and Herzegovina.

3. Methodology

3.1. Research Methods, Population and Sample

The empirical research was conducted with the aim of examining the role and importance of internal audit in the management system of public universities in Bosnia and Herzegovina, with a particular focus on employees' perceptions of its impact on transparency, risk management, quality of work, and the level of trust in institutional processes.

The research was designed as a comparative study covering public universities in Bosnia and Herzegovina, divided into two groups:

1. Group A – universities with an established internal audit unit
2. Group B – universities without a formally established internal audit

The target population consisted of employees from administrative, financial, and managerial structures of public universities, including:

- rectors and vice-rectors,
- secretaries general,
- heads of finance,
- coordinators for the financial management and control system ,
- internal auditors.

At universities where internal audit is established, internal auditors were included in the research, not as the only target group, but as part of a broader institutional perspective.

The questionnaire was distributed electronically to 64 email addresses of employees at public universities in Bosnia and Herzegovina between 1 January 2026 and 28 February 2026. Within the given timeframe, 36 properly completed questionnaires were received, representing a response rate of 56%. This response rate is considered satisfactory for research in the public sector. The sample was structured to enable comparison of perceptions between universities with and without established internal audit, ensuring the possibility of comparative analysis of institutional differences.

A limitation of this study is the relatively small sample size (36 respondents), which may limit the generalizability of the findings to the broader population of higher education institutions in Bosnia and Herzegovina. However, it should be noted that the sample includes employees from all public universities in Bosnia and Herzegovina, which provides a relevant institutional coverage despite the limited number of respondents.

3.2. Research Variables and Hypotheses

The following key variables were defined:

✓ **Independent variable:**
  - Existence of an established internal audit (yes/no)

✓ **Dependent variables:**
  - Perception of institutional transparency
  - Perception of the level of risk management development
  - Perception of accountability and legality of operations
  - Level of employee trust in institutional processes
  - Perception of the quality of internal controls

In accordance with the research objective, the following hypotheses were formulated:

- **H1:** There is a statistically significant difference in the perception of transparency and accountability between universities with established internal audit and those without it.
- **H2:** There is a statistically significant relationship between the perception of the importance of internal audit and the level of employee trust in institutional processes.

- **H3:** The perception of the development of risk management is positively related to the existence of internal audit.
- **PH1:** Established internal audit has a positive impact on the perception of management quality and institutional integrity.

The hypotheses were formulated in line with the theoretical framework based on the concept of Public Internal Financial Control (PIFC) and European standards of good governance.

3.3. Data Analysis Methods

Descriptive and inferential statistical methods were used in data processing. Descriptive statistics included:
- arithmetic mean,
- standard deviation,
- frequencies and percentages.

To test differences between two independent groups (universities with and without internal audit), the following were used:
- independent samples t-test (in case of normal distribution),
- Mann–Whitney U test (in case of deviation from normality).

To examine relationships between variables: Spearman's rank correlation coefficient was used.

For testing proportions: a one-sample proportion test was applied.
The level of statistical significance was set at 5% ($\alpha = 0.05$).

3.4. Research Limitations

A limitation of the research is reflected in the relatively limited number of universities with established internal audit, which may affect the generalizability of the results. Additionally, the research is based on respondents' perceptions, which implies a subjective assessment of institutional processes. However, the comparative approach enables a relevant overview of institutional differences and provides a basis for further, more extensive research in this field.

4. Results

The empirical research included 36 respondents from public universities in Bosnia and Herzegovina, of whom 18 (50%) come from universities with an established internal audit function, and 18 (50%) from universities without an established internal audit function.

Table 1 presents the descriptive statistics regarding respondents' perception of the quality of internal audit across the two groups.

Table 1. *Perception of the quality of internal audit*

Group	M	SD	N
Universities without internal audit	4,38	0,40	18
Universities with internal audit	4,77	0,25	18

Table 2 presents the respondents' perceptions of transparency and trust in institutions with and without internal audit.

Table 2 . *Perception of transparency and trust*

Group	M	SD	N
Universities without internal audit	4,01	0,33	18
Universities with internal audit	4,60	0,21	18

Table 3 provides a detailed overview of the descriptive statistics for all measured variables, including perceptions of governance, financial discipline, risk management, and institutional trust.

Table 3. Universities with an established internal audit have higher average values across all measures

	mean	**std.**	**min.**	**max.**	**std.**
Internal audit (YES=1 / NO=0)	0,5	0,507	0	1	0,507
Internal audit plays an important role in improving university governance.	4,083	0,906	2	5	0,906
Internal audit contributes to strengthening financial discipline.	4,694	0,577	3	5	0,577
Internal audit contributes to reducing the risk of irregularities.	4,861	0,351	4	5	0,351
Internal audit recommendations contribute to improving the work of organizational units.	4,806	0,401	4	5	0,401
Internal audit represents an important mechanism of institutional control.	4,417	0,769	3	5	0,769
I have confidence in the transparency of decision-making processes at the institution.	3,75	1,079	2	5	1,079
I believe that financial processes are clearly defined and controlled.	4,444	0,652	3	5	0,652
Institutional procedures are consistently applied.	4,833	0,378	4	5	0,378
Management acts responsibly in resource management.	4,722	0,513	3	5	0,513
I believe that internal control mechanisms are effective.	3,778	0,7601	2	5	0,760
Do you believe that an established internal audit contributes to transparency and accountability	0,833	0,378	0	1	0,378

The results of the descriptive statistics show that respondents highly perceive internal audit as a significant mechanism for improving governance, financial discipline, and institutional control ($M > 4$), with relatively low response dispersion, while the level of trust in transparency and the effectiveness of internal controls is somewhat more moderate ($M \approx 3.7$–3.8), with 83% of respondents believing that internal audit contributes to transparency and accountability. The average overall perception of the importance of internal audit is 4.81, indicating a high level of agreement among respondents regarding the importance of internal audit in higher education institutions. The average overall perception of the impact of internal audit on transparency and accountability is 4.75, indicating a high level of awareness among employees of the positive contribution of internal audit to management quality and institutional processes.

Table 4 presents the results of the Mann-Whitney U test, used to examine statistically significant differences between universities with and without internal audit.

Table 4. Test of differences

	statistic	**p_value**
Internal audit plays an important role in improving university governance.	232	0,019574321
Internal audit contributes to strengthening financial discipline.	175	0,600730012
Internal audit contributes to reducing the risk of irregularities.	207	0,018795851
Internal audit recommendations contribute to improving the work of organizational units.	189	0,221475519
Internal audit represents an important mechanism of institutional control.	222	0,033255912
I have confidence in the transparency of decision-making processes at the institution.	288,5	3,28421E-05
I believe that financial processes are clearly defined and controlled.	216	0,057519178
Institutional procedures are consistently applied.	180	0,391213138
Management acts responsibly in resource management.	190,5	0,239639047
I believe that internal control mechanisms are effective.	239	0,008803417
Do you believe that an established internal audit contributes to transparency and accountability	216	0,008760706

Statistically significant differences between the two groups are most pronounced in the perception of the contribution of internal audit to improving governance, reducing risk, strengthening the transparency of decision-making processes, and institutional accountability, indicating that the presence of a formally established internal audit influences a more positive perception of management and control mechanisms.

Table 5 presents the results of Spearman's rank correlation analysis between the existence of internal audit and selected institutional variables.

Table 5. Spearman Correlation Coefficients

Variable	**ρ (Spearman)**
University governance improvement	0.397
Financial discipline	0.092
Risk reduction	0.402
Internal audit recommendations	0.211
Institutional control	0.363
Transparency of decision-making	0.705
Financial processes	0.324
Institutional procedures	0.149
Management accountability	0.202
Effectiveness of internal controls	0.446
Transparency and accountability	0.447

The results of Spearman's correlation analysis indicate moderate to very strong positive relationships between the existence of internal audit and perceptions of transparency, the effectiveness of control mechanisms, and institutional accountability. The strongest relationship is observed between the existence of internal audit and trust in the transparency of decision-making processes ($\rho = 0.705$). Furthermore, the perceived importance of internal audit in improving governance is strongly associated with perceptions of institutional control ($\rho = 0.735$) and the effectiveness of internal controls ($\rho = 0.675$), which supports the theoretical assumption of its systemic role in strengthening governance and control functions.

4. Discussion

Internal audit represents a key mechanism for strengthening transparency, accountability, and the efficiency of governance in higher education institutions. Its role in the modern public sector goes beyond traditional compliance and legality control and encompasses strategic advisory services, risk assessment and management, as well as the continuous improvement of governance and control processes. In the context of Bosnia and Herzegovina, the development of internal audit in higher education is normatively grounded within the relevant regulatory framework; however, its practical implementation remains insufficiently developed, indicating the need for further strengthening of institutional and human resource capacities, as well as its deeper integration into the governance system.

The results of the empirical research confirm that respondents from universities with an established internal audit function largely recognize its contribution to improving governance quality, strengthening financial discipline, and enhancing institutional accountability. A statistically significant positive relationship was identified between the perceived importance of internal audit and the level of employees' trust in institutional processes, further confirming its role as an important factor of institutional stability and credibility. In particular, the existence of internal audit is associated with higher levels of trust in decision-making processes and greater perceived institutional accountability.

The findings of this study are consistent with previous research emphasizing the positive role of internal audit in strengthening governance and accountability in public sector institutions (Arena & Azzone, 2009). Recent research further supports these findings, emphasizing that internal audit, when integrated with governance and risk management frameworks, contributes to improved transparency, accountability, and organizational resilience in public sector institutions (Bulău et al., 2024). These results confirm that internal audit should not be viewed solely as a compliance mechanism, but as a strategic function contributing to organizational resilience and decision-making quality. However, unlike studies that mainly focus on broader public administration systems, this research highlights the specific context of higher education institutions in Bosnia and Herzegovina, where governance structures are more complex and decentralized.

The main contribution of this study lies in providing empirical evidence on the role of internal audit in higher education institutions in Bosnia and Herzegovina, an area that has been relatively under-researched. The study also offers comparative insights between institutions with and without established internal audit functions, thereby contributing to a better understanding of its practical significance in improving governance, financial discipline, and risk management. Although the study provides valuable empirical evidence, its theoretical contribution is primarily confirmatory in nature, as the findings largely support existing literature on the positive role of internal audit in strengthening governance, accountability, and risk management in public sector organizations. However, the added value of this research lies in its specific focus on higher education institutions in Bosnia and Herzegovina, which represents an under-researched context and provides additional empirical validation of established theoretical assumptions.

At the same time, the results reveal certain limitations in institutions where internal audit is not formally established or is not fully functional. Lower scores on key indicators in these institutions suggest weaker governance and control mechanisms, which may negatively affect transparency and institutional efficiency. This further emphasizes the importance of a systematic and consistent approach to the development of internal audit in higher education institutions. The study is based on respondents' perceptions rather than objective performance indicators such as audit reports or institutional performance data. While this approach provides valuable insight into employees' views on internal audit, it also represents a limitation, as perceptions may not fully reflect actual institutional performance. In addition, access to internal audit reports is restricted, as they are prepared exclusively for internal institutional use and are not publicly available, which limits the possibility of incorporating objective audit findings into the analysis. Future research should therefore combine survey-based data with objective indicators, such as financial performance metrics, and compliance assessments, in order to provide a more comprehensive analysis.

Overall, the empirical results provide support for the research hypotheses. The findings confirm that internal audit is significantly associated with improvements in governance, transparency, risk management, and institutional accountability in higher education institutions in Bosnia and Herzegovina, while its relationship with financial discipline is positive but not statistically significant in all tests. Accordingly, H1 is supported, H2 is partially supported, and H3 is supported. The findings confirm that internal audit plays an important role in strengthening institutional integrity and improving governance practices in higher education. Its development should be supported through continuous professional education of internal auditors, strengthening their independence, and improving cooperation with management. Particular attention should be given to the alignment with international standards and best practices, which would enhance transparency, accountability, and overall institutional performance in higher education systems.

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