



The impact of COSO-based integrated internal control system on corporate governance principles in the sustainability era: The case of a leading educational foundation



Eslem Cömert ^(a) Tamer Aksoy ^(b) *

^(a)School of Graduate Studies, Ibn Haldun University, Ordu Cad. No:3, 34480 Basaksehir, Istanbul, Turkiye

^(b)Professor of Accounting and Finance, School of Business, Ibn Haldun University, Ordu Cad. No:3, 34480 Basaksehir, Istanbul, Turkiye

ARTICLE INFO

Article history:

Received 25 September 2025

Received in rev. form 20 Nov. 2025

Accepted 09 December 2025

Keywords:

COSO, Internal Control System,
Corporate Governance, Auditing,
Educational Foundation

JEL Classification:

M42, M14, M41

ABSTRACT

This study mainly aimed to examine the impact of the COSO's internal control system components (Control Environment, Risk Assessment, Control Activities, Information-Communication, Monitoring) on corporate governance principles (justice, transparency, accountability and responsibility) through the example of a leading educational foundation in Türkiye. In the study, it was investigated whether there was a significant relationship between the perceptions of employees regarding the effects of the internal control system components on corporate governance. It was also investigated whether these perceptions differed according to demographic characteristics such as gender, age, education, length of service, position. Methodologically, a descriptive online survey method including a questionnaire was applied to collect data. The survey was sent to 234 participants in different departments and positions working in the foundation, and 197 employees responded. The data were analyzed with SPSS-22. The survey, which was suitable for a 5-point Likert scale, included statements regarding demographic characteristics and COSO's main internal control components and corporate governance principles. The study concluded that all COSO components have a significant and positive relationship with corporate governance principles. In addition, a stronger relationship was revealed between transparency and accountability principles and internal control components compared to others. Furthermore, it was indicated that these perceptions differed according to demographic characteristics. While significant differences were found in perceptions according to demographic characteristics such as gender, age and position, no differences were found according to education and working years criteria. The study is considered to contribute to the literature because it is the first study to examine the impact of the main COSO internal control components on corporate governance principles, together with the example of a leading educational foundation. The study is limited by the selected sample educational foundation, the number of respondents, survey questions-answers, the applied statistical analysis method and tests. Therefore, in order to reach more general results, it is suggested to expand the studies with more diverse and larger numbers of educational foundations, employees, survey questions and statistical methods.

© 2025 by the authors. Licensee SSBFNET, Istanbul, Turkey. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).

Introduction

In the early 2000s, scandals at giant companies like Enron, WorldCom, and Tyco profoundly shook not only the financial systems but also the internal structures of businesses and the concept of corporate governance. Particularly with the loss of investor confidence, companies suffered significant losses not only financially but also in terms of reputation. The causes of these scandals, which had a global impact, include inadequate and ineffective internal control systems, weaknesses in corporate governance, lack of corporate responsibility, fraudulent financial reporting, undermining auditor independence, and insufficient oversight, among others.

Globally, these scandals, which have led to company failures and multifaceted negative impacts, have been significantly influenced by factors including a lack of internal control, ineffective operation of internal control systems, and deficiencies in corporate

* Corresponding author. ORCID ID:0000-0001-6483-4547

© 2025 by the authors. Hosting by SSBFNET. Peer review under responsibility of Center for Strategic Studies in Business and Finance.

<https://doi.org/10.20525/ijrbs.v14i10.4852>

governance. In response to this situation, international organizations and governments have developed various measures and approaches. Accordingly, the Sarbanes-Oxley Act, enacted in the US in 2002, aimed to prevent the recurrence of similar scandals by disciplining all the causes that lead to them (SOX, 2002). This act introduced very strict regulations, responsibilities, and standards for relevant stakeholders regarding the establishment and effective operation of internal control systems and the enhancement of corporate governance. In this context, new systematic internal control system models, such as the COSO integrated internal control framework, have been developed to improve and enhance internal control systems, which are among the causes of scandals (Aksoy & Aksoy, 2020).

Furthermore, regarding the lack of corporate governance, which is another important factor in the occurrence of scandals, the OECD has established corporate governance principles (transparency, accountability, fairness, responsibility), and these principles have become the cornerstones of good governance in businesses (OECD, 2023).

COSO's integrated internal control system framework has become an effective guide to internal control practices not only for private sector businesses but also for public institutions and non-governmental organizations such as educational foundations. The COSO-based integrated internal control model, with its five core components (control environment, risk assessment, control activities, information and communication, oversight), offers a systematic structure for all corporate enterprises (COSO, 2013).

Thus, the internal control system, whose importance has increased significantly, has become one of the safety valves in ensuring the protection of business assets, the achievement of goals, the effectiveness of processes, corporate governance, accountability, sustainability, etc. Therefore, after scandals, the internal control system and corporate governance have taken their place among the fundamental requirements of the audit ecosystem and effective business management, especially in the age of sustainability (Aksoy & Hacıoğlu, 2021).

In this context, the existence of an effective internal control system plays a critical role in ensuring the healthy implementation of corporate governance principles within the organization. An internal control system refers to a structure that supports organizations in achieving their goals, increases operational efficiency, and enables measures to be taken to prevent corruption and errors. The COSO internal control model, as one of the most widely used and accepted models for this purpose, ensures the effectiveness of internal control through fundamental components such as control environment, risk assessment, control activities, information and communication, and supervision (Türedi & Karakaya, 2015; Rittenberg, 2013).

These components of the COSO model provide the necessary infrastructure for the effective implementation of corporate governance principles. Corporate governance principles offer a fundamental framework for ensuring the sustainable success of organizations. These principles include core values such as fair and equitable treatment of stakeholders, transparency, risk management, responsibility and accountability. For public benefit organizations such as educational foundations, corporate governance is critical for increasing credibility and achieving long-term goals (Gökçen & Tipi, 2019; Mollaoğulları & Öncü, (2020).

This study mainly aimed to examine the impact of the COSO's internal control system components (Control Environment, Risk Assessment, Control Activities, Information-Communication, Monitoring) on corporate governance principles (justice, transparency, accountability and responsibility) through the example of a leading educational foundation in Türkiye. In the study, it was investigated whether there was a significant relationship between the perceptions of employees regarding the effects of the internal control system components on corporate governance. It was also investigated whether these perceptions differed according to demographic characteristics such as gender, age, education, length of service, position.

This study is considered to contribute to the literature because it is the first study to examine the impact of the main COSO internal control components on corporate governance principles, together with the example of a leading educational foundation.

Methodologically, a descriptive online survey method including a questionnaire was applied to collect data. The survey was sent to 234 participants in different departments and positions working in the foundation, and 197 employees responded. The data were analyzed with SPSS-22. The questionnaire, which used a 5-point Likert scale, included statements regarding demographic characteristics as well as COSO's core internal control components and corporate governance principles.

The research model was developed to examine the perceptions of employees of the foundation regarding the impact of the main components of the COSO integrated internal control system on corporate governance principles. The main hypotheses of the research were formulated as follows: Main hypothesis H1 investigated whether there is a significant relationship between employees' perceptions of the impact of the internal control components on corporate governance principles. Sub-hypotheses (H1,1- H1,20) of H1 investigated whether there is a significant and positive one-to-one relationship between the main COSO internal control components and corporate governance principles. Main hypothesis H2 examined whether these perceptions differed according to demographic characteristics. Sub-hypotheses (H2,1-H2,5) of H2 examined whether the perceptions of the main internal control components and corporate governance principles varied according to different demographic characteristics.

The study consists of four sections. The first chapter includes the introduction. In the second part, theoretical and conceptual background, basic concepts, corporate governance theories, main reasons of the global scandals, deficiencies in internal control and corporate governance, globally accepted principles of corporate governance are briefly introduced. COSO integrated internal control model and its main components, importance of internal control system and corporate governance in the sustainability era, related

studies in the literature are also contained in this part. The third section covers the methodology, research and an application on the impact of the main COSO internal control components on corporate governance principles, aim of the research, research model, data, sample, data collection, the scale used, population, hypotheses and limitations. The fourth section consists of statistical analysis and findings. The study ends with the conclusion and the reference list.

Literature Review

Theoretical and Conceptual Background

Corporate governance theories

The word governance is a broad and general concept, and the specific application of governance within the organizational structure of a business is called corporate governance, a branch of governance (Arslan & Alqatan, 2020).

Corporate Governance (CG) theories are approaches that explain the management structure, operation, and stakeholder relationships of businesses. These theories address how companies should be managed in accordance with the principles of transparency, accountability, justice, and responsibility. In the business world, the effectiveness of corporate governance plays a significant role in achieving goals and ensuring sustainability.

Agency theory

Agency Theory, particularly established in 1976 by Michael Jensen and William Meckling, has become widely used in the field of corporate governance. Agency Theory, which holds a significant place within corporate governance theories, plays a critical role in explaining management problems that arise, particularly in modern corporate structures. It argues that the relationship between a manager and a shareholder is a contractual one between an "agent" and a "principal." This theory primarily addresses conflicts of interest that occur between managers (board of directors and managing directors) and shareholders (investors). Shareholders are the primary actors who provide capital to a company and expect to profit from its success. Managers, on the other hand, are agents responsible for effectively using this capital to generate profit for the company. They demonstrated that managers in a company may make decisions in their own self-interest, and this may conflict with the interests of shareholders. This conflict of interest is called the "agency problem" and is at the heart of corporate governance (Jensen & Meckling, 1976).

Furthermore, this approach dictates that business owners and shareholders should establish the necessary corporate structures and systems (internal control, accounting, budgeting, risk management, etc.) to prevent potential conflicts of interest between themselves and managing agents, and to ensure effective oversight of business operations (Aksoy & Denkdemir, 2024; Camci & Aksoy, 2024). Factors such as monitoring costs, tie-up costs, and residual losses can be reduced by establishing and activating systems of internal control, corporate governance, accountability, risk management, and transparency within the framework of corporate governance principles (Büber, 2008). Agency theory is based on the assumption that managers may make decisions in their own self-interest, and that this may conflict with the interests of shareholders. Internal control systems and corporate governance mechanisms aim to minimize these conflicts of interest identified by agency theory. Internal control systems increase transparency and accountability in business processes, allowing for the monitoring of managers' decisions. Corporate governance principles, on the other hand, reduce agency problems by strengthening elements such as justice, responsibility, transparency, and accountability in the management of the company (Muth & Donaldson, 1998).

Internal control and corporate governance, when considered within the framework of agency theory, are two fundamental concepts that complement each other to ensure that company management operates in a transparent and accountable manner. Internal control systems increase the efficiency of financial and operational processes in businesses, allowing for the monitoring of managers' decisions. Internal control mechanisms, considered within the scope of monitoring costs, enable the regular control of managers' activities and the provision of reliable information to shareholders (Çelik & Bedük, 2014). Monitoring costs created, supported by corporate governance principles to ensure managers focus on long-run strategic goals, a reducing effect on stakeholder distrust and reduce agency issues (Yağlı, 2019; Bal & Ufacık, 2023).

Stakeholder theory

Stakeholder Theory argues that companies should be accountable not only to their shareholders but also to all stakeholders affected by their operations. According to this theory, the sustainability of a business should not be based solely on profit maximization, but also on strategies aimed at meeting the expectations of stakeholders such as employees, customers, suppliers, the government, local communities, and non-governmental organizations. Developed by Edward Freeman in 1984, this theory provides a framework supporting the concept of corporate social responsibility, requiring businesses to also consider their ethical responsibilities (Freeman, 2010).

Internal control systems and corporate governance mechanisms are critical tools for regulating the broad areas of responsibility envisioned by Stakeholder Theory and ensuring the sustainability of the business (Ertuğrul, 2008; Ertuna, 2015). Internal control plays a significant role in meeting stakeholder expectations by ensuring the financial reliability, operational efficiency, and legal compliance of companies. Corporate governance, on the other hand, increases stakeholder trust by enabling businesses to develop a

transparent, accountable, fair, and responsible management approach. In this context, internal control mechanisms directly align with the fundamental principles of corporate governance and contribute to securing all processes of the businesses (Manna et al., 2019).

Internal control mechanisms are of great importance, especially in terms of protecting the interests of stakeholder groups as indicated by Stakeholder Theory. From the perspective of employees, internal control systems help ensure the implementation of occupational health and safety standards, the execution of fair wage policies, and the adoption of ethical principles (in accordance with Stakeholder Theory, managers' decisions should consider not only profitability but also the sustainability of the company and its contribution to society. At this point, internal control mechanisms come into play, acting as a preventive element against managers making unethical decisions or misusing company resources (Dinçer, 2013; Doğan, 2018)). From the perspective of external stakeholders, internal control systems guarantee the monitoring of the quality of products and services offered to customers, the transparency of agreements with suppliers, and full compliance with government regulations. Thanks to internal control processes, companies are prevented from violating consumer rights, and reliable service is provided to customers (Khitiri, 2017).

Corporate governance mechanisms are directly related to the fundamental principles of Stakeholder Theory: transparency, accountability, and ethical responsibility. A good corporate governance structure ensures the independence of board members, guaranteeing that managers consider the interests of all stakeholders, not just shareholders. Board audit committees, working in conjunction with internal audit systems, ensure that the company's strategic goals are aligned with societal expectations. Ensuring that companies operate in accordance with ethical principles is also a fundamental element of corporate governance (Zengin & Altıok, 2017; Ertuna, 2015). Another advantage of corporate governance is that it guarantees the long-term sustainability of companies through internal control systems integrated into risk management processes. Internal control systems enable businesses to identify financial and operational risks and take necessary measures to minimize them. Another important link between internal control and corporate governance can be explained by the concepts of monitoring costs and tie-up costs. Monitoring costs encompass the expenses businesses incur to audit their managers and protect stakeholder interests. Internal control, internal audit systems, financial reporting processes, corporate governance principles and independent audit mechanisms bear these costs to ensure companies' compliance with ethical standards (Doğan, 2018; Yıldırım, 2020).

Institutional theory

The foundations of institutional theory are based on the study of John Meyer and Brian Rowan. This study, a significant turning point in the development of institutional theory, stated that institutions adopt formal structures not only for efficiency but also to gain legitimacy and conform to societal expectations (Meyer & Rowan, 1977). Furthermore, the concept of "institutional isomorphism," introduced by Paul DiMaggio and Walter Powell explained that institutions become similar to each other over time due to similar pressures (DiMaggio & Powell, 1983).

Institutional theory is an important approach used to explain the behavior and structures of institutions. This theory argues that institutions do not act solely in accordance with economic and rational decisions, but are also shaped by the social, cultural, political, and institutional norms of their environment. Institutional theory suggests that institutions must conform to the institutional structures and expectations in their environment to gain legitimacy and survive. Transparency, a crucial element in gaining legitimacy, is ensured through internal control mechanisms (Kılınc, 2016; Tufan & Ege, 2021). Internal control and corporate governance systems, financial reporting and risk management practices enable businesses to be considered trustworthy by investors, regulatory bodies, and other stakeholders. Internal control systems help companies adapt to corporate pressures by monitoring their financial, operational, and legal processes (Khitiri, 2017).

Corporate governance, on the other hand, ensures that companies are managed in accordance with the principles of accountability, transparency, justice, and responsibility. Directly related to internal control systems, corporate governance mechanisms oversee the decision-making processes of managers, guaranteeing that the company fulfills its responsibilities to its stakeholders (Yavuzaslan, 2014).

From the perspective of corporate pressures, internal control and corporate governance mechanisms facilitate companies' compliance with coercive, imitative, and normative pressures. Coercive pressures refer to legal obligations imposed by the state and regulatory bodies. Internal control systems ensure that companies comply with financial reporting standards, fully meet their tax obligations, and act in accordance with environmental regulations. Corporate governance mechanisms, on the other hand, encourage managers to make decisions within an ethical and legal framework by guaranteeing the independence of boards of directors. This process strengthens the legitimacy of businesses by preventing them from being subject to legal sanctions. Imitative pressures argue that companies should act by modeling successful examples during periods of uncertainty. Companies that strengthen internal control systems and increase independent audit mechanisms to prevent financial scandals ensure their transparency, reliability, accountability, and long-term sustainability by adopting successful corporate governance practices (Soysal, 2015; Doğan, 2018). Normative pressures encompass professional standards, ethical rules, and regulations determined by professional organizations. Internal control mechanisms ensure that companies act in accordance with these ethical rules, while corporate governance processes guarantee the transparency and accountability of the company (Manna et al., 2019).

Internal control systems and corporate governance mechanisms stand out as important tools that enable companies to gain legitimacy within the framework of corporate theory. Internal control systems ensure the accuracy of financial reporting, enabling companies to

build reliable relationships with their stakeholders. From a risk management perspective, internal control systems and corporate governance practices allow companies to identify potential crises in advance and take proactive measures against them. Early detection of financial risks, operational errors, and ethical violations increases the company's crisis management capacity. Corporate governance mechanisms encourage boards of directors to assess strategic risks and develop long-term plans. Internal control systems, on the other hand, ensure the continuous monitoring of operational processes, thus safeguarding the company's operations (Khitiri, 2017).

Main causes of the scandals, deficiencies in internal control and corporate governance

In addition to other factors, a number of elements have played a role in the occurrence of global scandals. Some of these factors include: lack of internal control, lack of corporate governance, insufficient emphasis on fundamental corporate governance principles (transparency, accountability, justice, responsibility), fraudulent financial reporting, financial manipulation, erosion of ethical principles and values such as honesty, transparency, and justice, deficiencies in the control environment, lack of regulation and oversight, violation of auditor independence, technological vulnerabilities, ineffective communication with internal and external stakeholders, data security vulnerabilities, etc. (Kayisi, & Aksoy, 2024; Çevikbaş, 2011; Akçakanat, 2012; Ece & Güner, 2018). To prevent scandals from recurring and to eliminate the causes that contribute to them, the Sarbanes-Oxley Act was enacted in the US in 2002. The law in question has had a global impact on the legislation and practices of all countries in terms of disciplining the causes of scandals and activating corporate governance principles and internal control systems (SOX, 2002).

One of the most fundamental causes of scandals is the lack of internal control, which refers to the inadequacy of control and supervision mechanisms over the processes and activities of businesses. This deficiency can lead to negative consequences such as the inability to protect assets, increased risk of fraud, unreliable and fraudulent reporting (Uzay & Aksoy, 2021), non-compliance with regulations, failure to achieve targets, ineffective and inefficient conduct of operations, and damage to transparency, accountability, and sustainability. The lack of internal control stands out as a serious threat to the sustainability and reliability of businesses. An effective internal control system prevents the above-mentioned negative consequences, enabling the business to achieve its goals and minimizing all significant risks (Aksoy, 2018).

Internal control systems are management mechanisms used by organizations to regulate their activities, minimize risks, and achieve goals. However, weaknesses in these systems or their ineffective operation can lead to major scandals at both the financial and operational levels, in addition to the aforementioned negative consequences. Deficiencies in internal control systems generally stem from organizations' inability to accurately assess risks and take effective measures against them. Failures in risk assessment processes can leave organizations vulnerable to financial, operational, or legal threats. Advanced internal control models have been developed to address weaknesses in internal control systems. In this context, the COSO Integrated Internal Control Framework is considered a gold standard adopted worldwide to improve the effectiveness of internal control systems. This advanced framework includes five main fundamental elements: control environment, risk assessment, control activities, information and communication, and oversight. Each of these elements is critical to ensuring the effective functioning of the internal control system (COSO, 2013).

Another factor contributing to the occurrence of global scandals is a lack of corporate governance. This deficiency generally arises when businesses lack an effective structure in their management and audit processes and fail to comply with corporate governance principles. Failure to adopt and implement fundamental corporate governance principles such as transparency, accountability, justice, and responsibility in businesses can lead to a series of interconnected problems (fraudulent financial reporting, weak and strategically incapable boards of directors, weak audit committees, insufficient corporate responsibility, weak leadership, deficiencies in risk assessment and oversight processes, inadequate and ineffective internal/external information communication channels, distrust among shareholders and other stakeholders, business failures, inability to achieve goals, and weaknesses in accountability and sustainability) (Yazgılı, 2020; Ceyhan & Apan, 2014; Aytekin & Sönmez, 2016; Büyükdere, 2015; Graham, 2015; Driesen, 2018).

Globally accepted principles of corporate governance

Corporate governance, which can be defined in its broadest sense as the relationship between business management and stakeholders, is a concept that emerged in the 1980s and has gained widespread acceptance in the literature (Luo, 2005).

Corporate governance directs how a business is managed and its relationships with shareholders and stakeholders. With the right structures and systems, good corporate governance creates an environment of trust, justice, transparency, accountability, and responsibility within businesses, facilitating and ensuring the achievement and sustainability of business objectives. In other words, corporate governance is a set of fundamental principles that ensure companies fulfill their responsibilities to their stakeholders and are managed transparently and ethically. These principles are considered a guarantee of trust, sustainability, and ethical values in the business world. The core principles of corporate governance -justice, transparency, accountability, and responsibility- are critical for protecting the reputation of businesses and increasing trust among stakeholders. These principles are also supported by global standards set by international organizations. The G20/OECD's Principles of Corporate Governance serve as a guide for companies worldwide (OECD, 2023).

While these standards aim to protect investors and other stakeholders, they enable businesses to manage their operations more effectively and sustainably. However, deficiencies and weaknesses in the implementation of these standards can lead businesses to deviate from fundamental principles of corporate governance such as justice, transparency, accountability and accountability.

Neglecting or violating compliance with corporate governance principles was one of the major causes of global scandals (Gökgez, 2012).

Justice - transparency

Justice is one of the fundamental principles of corporate governance. Justice is a situation where every human being is treated equally, according to their respective rights and obligations. This principle aims to treat all stakeholders (shareholders, employees, customers, other interest groups) equally and to protect the rights and interests of all stakeholders. This principle prevents discrimination in decision-making processes, ensures that each stakeholder is evaluated under equal conditions, and promotes a fair management approach within businesses. Justice means that the expectations of shareholders, employees, customers, and other stakeholders are met fairly. A fair management approach increases the atmosphere of trust within businesses and allows for the establishment of strong relationships among stakeholders (Türedi et al., 2015; Karsono, 2023).

Transparency is one of the most critical elements of corporate governance. This element is the openness of organizations, businesses and the government in providing information regarding public resource management activities to parties who need information. It refers to the timely, accurate, open, and understandable sharing of corporate activities, decision-making processes, decisions, and financial information with stakeholders. The principle of transparency facilitates access to information and allows stakeholders to understand business activities accurately (Çevikbaş, 2011). This principle aims to ensure the accurate reporting of a company's financial statements and operational performance, prevent misleading information, and enhance public trust. Transparency encourages not only compliance with legal regulations but also the protection of ethical values. Proper management of information flow, both within and outside organizations, is crucial for credibility and reputation (Karcıoğlu & Kurnaz, 2017; Mardiasmo, 2004; Alloo & Thoma, 2018).

Accountability - responsibility

Accountability is another principle of corporate governance that refers to holding business management bodies and managers accountable to stakeholders for the decisions they make and the consequences of those decisions. Accountability can also be defined as the obligation of those in power and those they authorize to disclose, present, report, and explain all activities that fall under the responsibility of the party granting them power. This principle requires that the decisions and activities of management levels be explained to stakeholders. Accountability ensures that management processes within organizations are carried out in a more transparent and effective manner. Managers are required to regularly evaluate their performance and the impact of their decisions and share these evaluations with stakeholders. This principle increases managers' sense of responsibility and supports a more effective leadership approach in the process of achieving the company's goals. Accountability contributes to the creation of a fair working environment by promoting compliance with ethical values within the business (Karsono, 2023).

Responsibility is another corporate governance principle. Responsibility is a fundamental concept in the fields of morality, philosophical ethics, law, organizations, and politics. It refers to a person's ability to account for their actions and the possibility of being held responsible for those actions. It encompasses actions performed freely, knowingly, and their consequences (Baumgartner et al., 2018).

This principle requires businesses to operate by considering their economic, social, and environmental impacts. The principle of accountability encourages not only compliance with legal regulations but also the adoption of a business model consistent with ethical values. Businesses should evaluate the consequences of their decisions and take the necessary steps to minimize negative impacts. Accountability includes institutions contributing to society and supporting social responsibility projects. This principle plays a critical role in businesses achieving their long-term sustainability goals and creates a positive image in the eyes of the public (Köse & Bekci, 2017; Bozlak, 2019). In other words, this principle means that businesses bear responsibility and fulfill their obligations not only to their shareholders and internal stakeholders but also to all stakeholders and society. Responsibility principle refers to the behavior that determines how to react to everyday situations, which require some kind of moral decision (Baumgartner et al., 2018).

The continued existence of accepted principles of corporate governance is only possible with a robust, advanced, and effectively functioning integrated internal control system.

COSO integrated internal control model

The COSO Integrated Internal Control Framework is an advanced internal control model developed specifically for corporate businesses and recognized internationally as a gold standard. The COSO (i.e. Committee of Sponsoring Organizations of the Treadway Commission) internal control model provides a structured and systematic approach to internal control that supports the achievement of corporate goals, acting as a "safety valve" for businesses to operate in accordance with corporate governance principles. COSO published its first Integrated Internal Control Framework in 1992 and updated it in 2013. In 2023, COSO published additional guidance to assist businesses in establishing effective internal controls over sustainability reporting, taking this reporting into account (COSO, 2025).

According to the COSO model, internal control systems are generally built upon five core components as mentioned above. Those components below ensure the effective functioning of internal controls and the achievement of organizational goals. Internal control systems play an effective role in improving corporate governance, risk management, and internal control processes; protecting assets;

ensuring reliable financial reporting; regulatory compliance; preventing fraud; increasing the efficiency and effectiveness of business processes and operations; achieving corporate strategic, operational, and financial goals; transparency; accountability; and sustainability (Celayir, 2019; Görmen, 2019; Özyiğit, 2023; Uludağ, 2023, COSO, 2013).

Main components of the COSO-based internal control system

Control environment - Risk assessment

The first main component of the COSO integrated internal control system is the control environment. It reflects the overall ethical values, culture, and control awareness of the organization. This environment determines how an organization manages its operations and the effectiveness of its internal control system. The control environment includes fundamental elements such as integrity, ethical values, independence and oversight of the board of directors, distribution of duties, authority and responsibilities, adequacy of human resources, training, transparent and fair performance management, and accountability. These elements support organizations in achieving their goals while also forming the basis for risk management processes (Kayım, 2009; Koban & Karakaya, 2022; COSO, 2013).

Another key component of COSO is risk assessment. Risk assessment encompasses the processes of identifying, analyzing, and managing risks that may threaten an organization's ability to achieve its objectives. This process enables organizations to be prepared for and effectively manage risks arising from both internal and external environments. In summary, this key component includes: clearly defining corporate objectives, an effective risk assessment process, risk analysis involving the identification and evaluation of risks, consideration of fraud risks, and assessment of the potential impact of changes (Sabuncu, 2017; COSO, 2013). The changes, new trends, developments, technologies, strategies, and digital tools experienced in the digital age have made it necessary to monitor and manage all risks of the business much more meticulously and effectively than before (Aksoy & Hacıoğlu, 2021).

Control activities - Information and communication

Control activities are another key component of COSO. This component includes the measures taken and procedures implemented against risks that may prevent organizations from achieving their defined objectives. Control activities constitute the concrete steps that support the functioning of the internal control system and ensure the minimization of risks. These activities are implemented at all levels of the organization and are a fundamental component for an effective internal control system. Risk mitigation control mechanisms, technological controls, and the implementation of policies/procedures constitute the three main dimensions of control activities (Aytekin & Sönmez, 2016; Uysal, 2021; COSO, 2013).

Another key component of COSO is Information and Communication. Information and communication is one of the fundamental elements that enhance the effectiveness of a business' internal control system. This element ensures that accurate, reliable, and high-quality information is delivered to the right stakeholders in a timely manner, that internal and external communication channels are established and effectively operated for both internal and external stakeholders, and that cooperation within the organization is strengthened. Information and communication processes are critically important for increasing the operational efficiency of businesses, supporting risk management, and meeting the expectations of internal and external stakeholders (COSO, 2013; Görmen, 2019; Celayir, 2019).

Monitoring

Monitoring constitutes the fifth and final core component of COSO. This core component plays a critical role in ensuring the effectiveness and continuity of the internal control system of businesses. Monitoring activities encompass continuously evaluating the performance of the internal control system and the effectiveness of processes and procedures, identifying deficiencies, and taking necessary corrective, preventive, improvement, and developmental measures to address these deficiencies. An effective monitoring mechanism enables organizations to adopt a more proactive approach to risk management and to manage their corporate governance, internal control, and risk management processes and all operations more effectively (Köse & Bekci, 2017; Ece & Güner, 2018; COSO, 2023).

Table 1: COSO Integrated Internal Control Framework

Main internal control components	
1)	Control environment
2)	Risk assessment
3)	Control activities
4)	Information and communication
5)	Monitoring

Source: COSO, 2013

Ultimately, the core components and sub-principles of the COSO internal control system enable businesses to establish a reliable control mechanism, comprehensively analyzing and minimizing all operational risks, including corporate governance, internal control, and risk management processes, and strengthening corporate governance principles. It is crucial that the internal control system does not remain a theoretical framework but is successfully implemented to achieve operational and strategic goals.

Accordingly, each internal control component must be effectively based on and integrated into all functions and processes within the entire organization, along with corporate governance principles, and embraced by all employees. Especially, in the digital age we live in, having an effective internal control system and compliance with corporate governance principles has become much more important in terms of achieving goals and ensuring sustainability (Aksoy & Hacıoğlu, 2021).

Internal control system and corporate governance in the sustainability era

Internal control system and corporate governance are fundamental tools that enable businesses to effectively implement their sustainability strategies, and are two critical factors necessary for the long-term success of businesses and stakeholder trust. These two components ensure that businesses achieve their sustainability goals. Digitalization and technological developments have caused a wide range of effects on businesses, especially changes on business models covering the systems of internal control and corporate governance (Hacıoğlu & Aksoy, 2021).

The internal control system ensures the effectiveness and accuracy of all business processes within the organization and helps manage operational, financial, and environmental risks. Corporate governance, on the other hand, strengthens stakeholder trust through fundamental corporate governance principles such as transparency, accountability, justice, and responsibility. From a sustainability perspective, these two structures facilitate companies' alignment with their environmental, social, and economic goals, and ensure the accuracy of sustainability reporting and the creation of long-term value. For businesses, having a dynamic internal control framework that includes stakeholder expectations and integrating it into the overall strategic risk management architecture in line with fundamental corporate governance principles will enhance the contribution of internal control and corporate governance systems (Liu, 2018).

Related Studies in the Literature

Some of the studies in the literature are briefed below

Leng and Ding (2011) aimed to examine the effects of corporate governance structure on internal control transparency. The study included 1309 non-financial companies operating in China and listed on the stock exchange. Of the companies in the sample, 465 were traded on the Shenzhen Stock Exchange and 844 on the Shanghai Stock Exchange. Financial companies were not included in the study because they are subject to specific regulations regarding internal control disclosures. The study tested the relationship between the quality of internal control disclosures and corporate governance characteristics, particularly in terms of the ownership structure of the company, the characteristics of the board of directors, and the supervisory board. Descriptive statistics, Pearson correlation analysis, and linear regression analysis were used in the study. According to the analysis results, a negative relationship was found between internal control transparency and the state ownership rate in companies. However, a positive relationship was found between the internal control system and the salaries and education levels of managers. The relationship between the education level of auditors and internal control transparency was also determined to be positive. The results of the study suggest that Chinese regulatory authorities should make regulations to standardize internal control transparency in terms of subject and form. It was emphasized that improving corporate governance and internal control systems is crucial for companies to create healthier and more advanced structures.

Usul et al., (2011) aimed to examine the effectiveness of the internal control system in establishing corporate governance in municipal enterprises in the Marmara Region. The research utilized a face-to-face survey of accounting managers in municipal enterprises. The effectiveness of the internal control system was evaluated in enterprises selected using a random sampling method, and activities were examined under six main headings, with hypotheses formulated for each heading. According to the research findings, the internal control system in municipal enterprises was found to be ineffective in protecting cash and cash equivalents, and it was determined that the principles required by internal control were not applied in the accounting system. It was also observed that these enterprises lacked an effective internal control system in sales, inventory, fixed assets, and wage payments. The absence of preventive and deterrent measures resulted in the lack of an effective internal control system in these enterprises, and consequently, the absence of a corporate governance understanding. The study concluded that this situation hinders the application of corporate governance principles.

Another study by Sağlam and Aksoy (2020) was conducted using a survey method on employees of the fire service department in the Anatolian region under the Istanbul Metropolitan Municipality. The study examined whether the internal control system in local organizations with corporate governance has an impact on crisis management skills. As a result, it was concluded that the internal control system increased and positively affected crisis management skills before, during, and after a crisis.

Dineshkumar and Kogulacumar (2013) examined the effect of internal control elements on business performance in Sri Lanka Telecom. Internal control system and financial performance data were evaluated using correlation and SWOT analysis, and a strong and positive relationship was found between the internal control system and business performance.

Öztürk (2013) conducted a reliability analysis on survey data applied to 150 internal auditors from different sectors, and the Cronbach's Alpha coefficient was calculated as 0.975. This high value indicates that the internal consistency of the scale used is quite strong. The 22 corporate governance principles included in the survey were evaluated using frequency and percentage analyses. According to the results, the vast majority of participants stated that internal audit plays a supportive role, especially for the principles

of "accountability" (84.7%) and "transparency" (81.3%). 78% of participants stated that internal audit contributes to board decision-making processes and ensures internal ethical compliance. The analysis found significant relationships between corporate governance practices and variables such as the structure and position of internal audit units and the professional qualifications of auditors. These findings demonstrate that internal audit is not only a financial control tool but also a strategic tool that improves governance quality. The study reveals that an effective internal audit system greatly contributes to the establishment of the four fundamental principles of corporate governance – transparency, equality, accountability, and responsibility – within corporate structures.

In a study conducted by Ayagre et al., (2014), the effectiveness of the internal control system in the banking sector in Ghana was evaluated through a survey technique. The research findings revealed that the control environment and oversight components of the internal control system functioned effectively.

Another study conducted using a survey method on publicly traded banks in Ghana (Mohammed & Aksoy, 2020) showed that the internal control system and its main components have a positive effect on financial performance.

Ejoh and Ejom (2014) conducted a study at a higher education institution in Nigeria to examine the relationship between internal control activities and institutional performance. In the study, the effectiveness of the internal control system was evaluated using a survey method; financial performance was measured using indicators such as liquidity, accountability, and financial reporting. The research findings showed that no statistically significant relationship was found between internal control activities and institutional performance.

In another study, the relationship between internal control systems and financial performance in financial institutions in Kenya was examined. The findings revealed a positive relationship between internal control system components and financial performance (Collins, 2014).

The study by Ramírez and Tejada (2018) investigated the relationship between transparency and accountability principles in ensuring institutional governance in universities, and revealed that transparency and accountability play a role in improving university institutional governance.

In the study conducted in Marmaris by Kaderli and Köroğlu (2014), strong and significant relationships were found between accounting information systems (AIS) and corporate governance. The research revealed a statistically significant link between the reporting, data processing, and openness principles of AIS and the transparency and accountability principles of corporate governance. It was emphasized that thanks to AIS, managers can provide timely, accurate, and understandable information to the public and investors, which strengthens corporate governance principles and practices. In this context, the effectiveness of accounting information systems is of strategic importance not only for financial reporting but also for the functionality of corporate governance structures.

In Nardemir's (2014) study, it is emphasized that corporate governance and internal control structures are complementary elements. The study states that, as a requirement of institutionalization, businesses must not only fulfill legal obligations but also fulfill their responsibilities to stakeholders. The main purpose of corporate governance is to protect the rights of all stakeholders who have a direct and indirect relationship with the company, to ensure timely access to reliable financial information, and to increase managerial quality. It has been stated that corporate governance, supported by an effective internal control structure, plays a significant role in companies fulfilling their economic and social responsibilities and establishing investor confidence. In this respect, corporate governance is a fundamental determinant in the sustainable success of businesses.

In another study, it was found that the internal control system had a positive impact on store performance in the retail sector (Tekneci & Aksoy, 2023), while in yet another study (Karacan & Aksoy, 2022), it was concluded that the internal control system also affected organizational culture in the written, visual, and audio media sector.

A study conducted on banks in India examined the relationship between effective internal control systems and return on assets and return on equity. The data obtained in the study were evaluated using correlation analysis and ANOVA tests. The results showed that internal control systems were implemented most effectively in private banks, while their effectiveness was lower in Islamic banks. In the study, a positive and significant relationship was found between the effectiveness of the internal control system and financial performance indicators (Channar et al., (2015).

In Baskıcı's (2015) study, the relationship between corporate governance practices and the internal control system was examined on companies listed on the Istanbul Stock Exchange. 156 of the surveys applied to 368 companies were evaluated, and the analysis results revealed a strong positive relationship between the internal control system and corporate governance. The Cronbach Alpha reliability coefficient for the 45 variables used in the research was found to be 0.956, which shows that the scale has high reliability. The averages for the five components of the internal control system were below 2 on a five-point Likert scale; the most effective component was "control environment" ($\bar{x}=1.59$), followed by "risk assessment" ($\bar{x}=1.62$). The Spearman correlation test results show that there are significant positive relationships between each of the internal control components and corporate governance principles (equality, transparency, accountability, responsibility). (For example, the correlation between the control environment and accountability is $r=0.717$, $p<0.01$). Overall, the correlation coefficient between the internal control system and corporate governance

was calculated as 0.707. These findings indicate that the effectiveness of the internal control system directly affects the success of corporate governance.

Another study examined the relationships between the principles of justice and accountability in corporate governance and bank performance. The study found a positive relationship between the principles of justice and accountability and corporate governance and bank performance, indicating that these principles have a positive impact on both (Zhang et al., 2020).

Aykaç (2011) listed the responsibilities of top management in corporate governance under various headings. These responsibilities include establishing ethical rules within the business and monitoring compliance with these rules, monitoring risks and creating a risk management policy, evaluating corporate performance, establishing and implementing risk management and financial and operational control systems. More specifically, top management is responsible for developing business strategies, using resources effectively and efficiently, managing operations, and protecting assets. To successfully fulfill these tasks, establishing and maintaining an accounting system that provides reliable and high-quality financial reporting and an effective internal control system within the business are among the fundamental responsibilities of top management.

In the study by Türedi et al., (2015), it is emphasized that the corporate governance approach is not limited only to traditional principles such as transparency, accountability, justice, and responsibility; it must also be supported by effective internal audit processes. The study states that internal audit increases the applicability of corporate governance and plays an important role in monitoring and controlling business processes in line with strategic goals. It is also stated that new managerial principles such as risk management, adherence to ethical values, and stakeholder communication are included in the evolving structure of corporate governance. In this context, corporate governance is considered not only as a structural system but also as a holistic and dynamic process.

Erdoğan (2016), in his study conducted on five-star accommodation establishments in Antalya, examined the effects of internal control system components on the return on assets, gross profit margin, and asset turnover ratio of these businesses. A positive relationship was found between the elements of the internal control system and financial performance; furthermore, it was revealed that the internal control system has a positive and significant effect on financial performance.

In a study conducted by Çiğdem et al., (2018) on 38 companies included in the BIST Corporate Governance Index, the relationship between the internal control system and the corporate governance index was examined. The internal control system was considered to include its five main components (control environment, risk assessment, control activities, information-communication, monitoring). As a result, a significant and positive relationship was found between the internal control system and the corporate governance index. At the component level, the highest correlation was observed with risk assessment. Significant relationships were also obtained between information-communication and control activities and corporate governance. However, the relationships between control environment and monitoring and corporate governance were not found to be statistically significant. These results reveal that an effective internal control system plays an important role in strengthening corporate governance principles (equality, accountability, responsibility, and transparency), especially by increasing transparency in risk management, information sharing, and operational processes. Thus, it has been empirically confirmed that internal control systems are directly related to corporate governance practices in a structural way.

In a study conducted by Kabuye et al., (2019), the effects of internal control systems and working capital management on financial performance in supermarkets operating in Uganda were investigated. The study revealed that the internal control system did not have a significant effect on financial performance.

In Demirtaş's (2020) study, the applicability and effectiveness of internal control and risk management systems in educational foundations were evaluated. The study stated that internal control systems have a positive impact not only on financial processes but also on the management of strategic processes and a number of factors (transparency, accountability, risk identification, donor trust, financial discipline, corporate reputation) in businesses. The study indirectly addressed the relationship between internal control systems and corporate governance principles.

The study by Korga and Aslanoğlu (2020) examined the impact of internal control components based on the COSO model on banks' risk management through a survey of bank employees. The collected data were analyzed using the SPSS program; it was concluded that the risk assessment and control activities components, in particular, had a positive impact on risk management.

Kanca (2020) aimed to examine the impact of the internal control system on financial performance in companies included in the corporate governance index in Türkiye. According to the study findings, a positive but weak relationship was observed between the internal control system and market-based financial indicators. In contrast, a positive and strong link was found between accounting-based profitability indicators and the internal control system; it was concluded that an effective internal control system generally positively affects financial performance.

In another study conducted by Aksoy (2010), internal audit standards and corporate governance index rating were examined within the scope of 18 companies listed in the Istanbul Corporate Governance Index. The study revealed a significant relationship between the effectiveness of internal control and internal audit systems and corporate governance rating.

The study by Çiçekay and Demir (2021) examined the relationship between the five components of the COSO internal control model and the accounting information system. The study included 197 business officials operating in Van, Muş, and Bitlis provinces and employing at least 10 people. The study revealed that the control activities and control environment components were effectively implemented in the businesses, and that the internal control system contributed to corporate goals by reducing errors and risks.

In the study conducted by Tufan and Ege (2021), the relationship between corporate governance score and return on assets ratio was examined using data from 2009-2016 of firms included in the Borsa Istanbul Corporate Governance Index (BIST XKURY), and a positive and significant relationship was found between corporate governance score and return on assets ratio. It indicated that corporate governance practices are a strategic element that directly affects not only managerial transparency and accountability but also the financial performance of firms. The study also determined that the board of directors principle negatively affects return on assets. This situation reveals that corporate governance principles should also be evaluated individually.

Ibrahim (2022) investigated the impact of the internal control system on the financial performance of public, private, commercial, and participation banks operating in Iraq. The study based on the survey technique, factor analysis, correlation, and regression analyses concluded that all components of the internal control system in these banks positively impacted financial performance.

In order to contribute to the literature on the subject summarized above, this study aims to investigate the impact of COSO's core internal control components on corporate governance principles, using a leading educational foundation as an example.

Research and Methodology

Aim of the Research

This study mainly aimed to examine the impact of the COSO's internal control system components (Control Environment, Risk Assessment, Control Activities, Information-Communication, Monitoring) on corporate governance principles (justice, transparency, accountability, responsibility) through the example of a leading educational foundation in Türkiye. In the study, it was investigated whether there was a significant relationship between the perceptions of employees regarding the effects of the internal control system components on corporate governance. It was also investigated whether these perceptions differed according to demographic characteristics (such as gender, age, education, length of service, position).

Importance of the Study

The study is considered to contribute to the literature because it is the first study to examine the impact of the main COSO internal control components on corporate governance principles, together with the example of a leading educational foundation. The importance of this study stems from its potential to contribute to improving the corporate governance practices of educational foundations and creating a more accountable, transparent, and effective management structure. This research on the impact of the COSO internal control framework on corporate governance will be a contribution highlighting the strategic importance of internal controls in terms of corporate governance at the educational foundation level within the education sector.

Research Method, Population, Sample, Data Collection, and Scale

This study was conducted using a correlational survey model. A correlational survey model is a method that aims to examine the existence and direction of a relationship between two or more variables. In this study, a quantitative research method was adopted to examine the impact of the COSO internal control system on corporate governance. Data were collected using a descriptive online survey method covering a questionnaire. The questionnaire was compatible with the 5-point Likert scale. The study population consists of employees of the educational foundation. A simple random sampling method was used for sample selection, and the study was completed with 197 participants. The participants were foundation employees with varying ages, genders, educational levels, and professional experience.

Statistical analyzes were performed with SPSS 22 program and presented in tables below. In order to avoid taking up too much space with detailed tables within the scope of statistical analysis and to comply with the article page limit, only the explanations regarding the important findings and analyses were tried to be summarized rather than the tables. Various analyses (descriptive statistics, frequency and percentage analysis, analysis of variance, Cronbach Alpha Reliability Test, Pearson Correlation Analysis, Spearman Correlation Analysis, Factor Analysis, regression analysis, independent samples t-test, ANOVA (analysis of variance), Mann-Whitney U test, Kruskal-Wallis test, etc.) were used in the study.

Limitations

The study is limited by the selected sample educational foundation, the number of respondents, survey questions-answers, the applied statistical analysis method and tests. Therefore, in order to reach more general results, it is suggested to expand the studies with more diverse and larger numbers of educational foundations, employees, survey questions and statistical methods to obtain more general data.

Research Model and Hypotheses of the Research

This study mainly aimed to examine the impact of the COSO's internal control system components on corporate governance principles through the example of a leading educational foundation in Türkiye. In the study, it was investigated whether there was a significant relationship between the perceptions of employees regarding the effects of the internal control system components on corporate governance. It was also investigated whether these perceptions differed according to demographic characteristics. The core components of the COSO model were identified as control environment, risk assessment, control activities, information-communication, and monitoring. Global corporate governance principles were addressed as justice, transparency, accountability, and responsibility. Gender, age, education, length of service and position were covered as demographic characteristics.

Therefore, the research model was created covering 2 main hypotheses and 25 sub-hypotheses in total accordingly. The hypotheses of the research were formulated as below.

Table 2: Hypotheses

Main Hypotheses		
H1: There is a significant relationship between employees' perceptions of the internal control system (ICS) and their perceptions of corporate governance (CG) principles. The internal control system has a positive impact on corporate governance.		
H2: Employees' perceptions of the internal control system and their perceptions of corporate governance principles vary according to demographic characteristics.		
H1-Sub-Hypotheses:		
Control Environment (CE)		
H1.1: CE has a significant effect on fairness	H1.15: (I&C) have a positive effect on accountability	
H1.2: CE has a positive effect on transparency	H1.16: (I&C) have a positive effect on responsibility	
H1.3: CE has a positive effect on accountability.	Monitoring	
H1.4: CE has a positive effect on responsibility	H1.17: Monitoring has a positive effect on fairness	
Risk Assessment (RA)		
H1.5: RA has a positive effect on fairness.	H1.18: Monitoring has a positive effect on transparency	
H1.6: RA has a positive effect on transparency.	H1.19: Monitoring has a positive effect on accountability	
H1.7: RA has a positive effect on accountability.	H1.20: Monitoring has a positive effect on responsibility	
H1.8: RA has a positive effect on responsibility	H2-Sub Hypotheses:	
Control Activities (CAs)		
H1.9: CAs have a positive effect on fairness	H2.1: Perceptions of the ICS and CG principles vary according to gender.	
H1.10: CAs have a positive effect on transparency	H2.2: Perceptions of the ICS and CG principles vary according to age.	
H1.11: CAs have a positive effect on accountability	H2.3: Perceptions of the ICS and CG principles vary according to education.	
H1.12: CAs have a positive effect on responsibility	H2.4: Perceptions of the ICS and CG principles vary according to years of service.	
Information and Communication (I&C)		H2.5: Perceptions of the ICS and CG principles vary according to position.
H1.13: (I&C) have a positive effect on fairness		
H1.14: (I&C) have a positive effect on transparency		

Findings and Discussions

The SPSS-22 software package was used to perform the statistical analyses. To avoid exceeding the page limit of the article, instead of detailed tables showing the statistical analyses, only the important findings and summarized explanations were included.

Frequency and Percentage Values

The distribution of frequency and percentage values of the descriptive information of the participants constituting the sample, such as gender, age, years of service, education and position, is reflected in the table below.

Table 3: Frequency and Percentage Values of the Sample Group

Distribution by Gender			Distribution by Age			Distribution by Year of Service		
Gender	f	%	Age	f	%	Year of Service	f	%
Female	185	93,9	18-25	21	10,7	1 and under	26	13,2
Male	12	6,1	26-35	134	68,0	1-3	83	42,1
Total	197	100	36-45	26	13,2	4-6	44	22,3
			46-55	16	8,1	7 +	44	22,3
			Total	197	100,0	Total	197	100,0

Distribution by Education			Distribution by Position		
Education	f	%	Position	f	%
Associate	15	7,6	Manager	10	5,1
Bachelor	157	79,7	Unit Manager	4	2,0
Master	24	12,2	Dormitory Manager	20	10,2
Doctorate	1	,5	Coordinator	17	8,6
Total	197	100,0	Specialist	21	10,7
			Dorm.Admin Officer/ Assist.Manager Asistan	84	42,6
			Other	10	5,1
			Total	31	15,7
				197	100,0

According to the table, the study revealed that 93.9% of the foundation employees participating in the research were women and 6.1% were men. 10.7% of the employees were between 18-25 years old, 68% between 26-35 years old, 13.2% between 36-45 years old, and 8.1% between 46-55 years old. According to these distributions, the majority of participants were between 26-35 years old, with 7.6% holding a associate's degree, 79.7% holding a bachelor's degree, 12.2% holding a master's degree, and 0.5% holding a doctorate. The majority of foundation employees held a bachelor's degree. It was also found that 13.2% of the employees had been working at the education foundation for less than one year, 42.1% for 1-3 years, 22.3% for 4-6 years, and 22.3% for more than 7 years. According to these distributions, it is understood that the majority of the foundation's employees have been working at the education foundation for 1-3 years. It is also understood that the majority of the foundation's employees hold the position of dormitory administration officer/dormitory manager.

Normality Test Results

Within the scope of normality testing, the p-values obtained with the Kolmogorov-Smirnov test were found to be less than 0.05. Sample size is one of the fundamental factors to consider when evaluating the suitability of data to a normal distribution. It is widely accepted in the literature that the Kolmogorov-Smirnov test should be used if the sample size is 50 or more, and the Shapiro-Wilk test if it is less than 50. In this context, the appropriate test selection was made in accordance with the correct sample size in the study. Hypotheses are: H1: The data come from a normal distribution at a 95% confidence level. H2: The data do not come from a normal distribution at a 95% confidence level.

Due to the sample size exceeding 50, the Kolmogorov-Smirnov test was used to evaluate whether the scale data exhibited a normal distribution. P-values less than 0.05 indicate a deviation from normal distribution (George & Mallery, 2003). However, since this result alone is insufficient to conclude that the data is not normally distributed, additional analyses are presented below to support this conclusion.

The Kolmogorov-Smirnov test was applied to assess the suitability of the data for a normal distribution. However, considering that determining the analysis method based solely on the results of this test might be insufficient, additional statistical measures were examined to determine the preferred analysis technique. In this context, mean, variance, standard deviation, skewness, and kurtosis coefficients, as well as Detrended Q-Q Plot graphs, were analyzed.

Furthermore, identifying outliers that can increase the error variance is critical for the reliability of descriptive statistics. Before applying statistical tests, the presence of outliers in the dataset was examined. For a dataset to be considered normally distributed, its skewness and kurtosis values must be between -1.5 and +1.5 (Tabachnick & Fidel, 2013). If the kurtosis and skewness coefficients do not fall within the accepted standard limits, it indicates that the data does not conform to a normal distribution. Therefore, non-parametric tests were preferred in the analysis process, and the Mann Whitney U test and the Kruskal-Wallis H test were applied in the later stages of the research. The normality test results showed that the data were suitable for non-parametric analysis. This choice of technique allowed for the use of more appropriate analyses to test the impact of internal control on corporate governance and increased the validity of the H1 hypothesis tests.

Descriptive Statistics and Correlation Analysis

Descriptive statistics reveal general trends by presenting the mean, standard deviation, minimum, and maximum values for the scales. Correlation analysis is used to test the linear relationship between two variables or the direction and degree of the relationship between one variable and two or more variables (Tabachnick & Fidel, 2013).

The mean of the scale for the internal control components ranges from a minimum of 30.21 to a maximum of 45 points. The standard deviation ranges from 7.43 to 7.75, indicating that participant responses are distributed with a certain consistency and do not show very high differences. In conclusion, the descriptive statistics results show that participants' perceptions of the internal control system are generally at a high level. This also provides fundamental data supporting the contribution of internal control structures to corporate governance.

According to the correlation analysis results, there is a high level of positive and significant correlation between the main components of the COSO internal control system [Ranging from lowest to highest ($r = 0.728, p < 0.01$) to highest ($r = 0.82, p < 0.01$)] (Tabachnick & Fidel, 2013). The correlation between risk assessment and supervision, among the main internal control components, was found to be the highest, very strong, and significant. Similarly, the presence of statistically significant relationships between all variables within the scope indicates that the components work consistently and support each other. Consequently, hypothesis H1 is accepted. The correlation analysis findings also revealed high and positive significant correlations between the internal control system and corporate governance principles (fairness, transparency, accountability, and responsibility). This finding clearly demonstrates the impact of the internal control system on corporate governance practices. The fact that internal control systems are directly related to fundamental corporate values such as corporate transparency, accountability, fairness, and managerial responsibility demonstrates their significant role in establishing an effective governance structure.

Cronbach's Alpha (Reliability) Analysis and Factor (Validity) Analysis

To determine the accuracy of the scale used in the study and the reliability of the results, Cronbach's Alpha reliability analysis was performed. Cronbach's alpha or coefficient alpha is a reliability measure of the internal consistency of a set of survey items. Cronbach's alpha reliability coefficient normally ranges between 0 and 1 (George & Mallery, 2003). Accordingly, Cronbach's Alpha reliability coefficients indicated that the reliability of the scales was in the range of 0.965-0.970 and at a very high level (around 97%). In other words, it was understood that the scales used in the research were consistent with each other and had a very high degree of reliable representation. Hypothesis H1.1 was accepted because it was shown that the scales statistically reliably reflected the effects of the main components of internal control on corporate governance.

In multivariate statistical analyses, n observation units and p variables are examined. When there is a certain level of relationship, or correlation, between the variables, interpretation can become difficult, especially in analyses with large samples and many variables (Tabachnick & Fidel, 2013). Such situations can lead to the problem of multicollinearity, negatively affecting the accuracy and reliability of the analyses. Therefore, factor analysis is used to eliminate this multicollinearity between variables, reduce the number of variables, and make the sample size more manageable.

Table 4: Internal Control Components Validity Analysis and Percentage of Total Variance

Kaiser-Meyer-Olkin Sample Fit Coefficient		,926
Bartlett's Test of Sphericity	Chi-squared	2156,444
	Sd	36
	Sig.	,000

Factor	Core values			Sums of Rotated Factor Loadings		
	Total	Variance %	Cumulative %	Total	Variance %	Cumulative %
1	7,072	78,579	78,579	7,072	78,579	78,579
2	,599	6,653	85,232			
3	,390	4,335	89,567			
4	,255	2,831	92,398			
5	,205	2,274	94,672			
6	,179	1,991	96,664			
7	,137	1,526	98,190			
8	,100	1,106	99,296			
9	,063	,704	100,000			

The Kaiser-Meyer-Olkin (KMO) and Bartlett test results indicate that the scale is suitable for factor analysis. The analysis revealed a KMO coefficient of 0.896-0.926 for the main internal control components, indicating that the sample is suitable for factor analysis. Furthermore, the Bartlett test yielded a p-value of 0.000, a significant result suggesting that factor analysis is necessary and

appropriate. This demonstrates that the internal control system is structurally aligned with corporate governance principles. Additionally, factor analysis was applied to the 9-item internal control scale to reduce the number of items represented. The analysis revealed a single factor representing all items. This factor explains 78.579% of the scale's variance. According to this result, approximately 79% of the research data can be explained by this single factor. This indicates that the study has a very high and acceptable level of validity.

Table 5: The Relationship Between the Perceptions of Internal Control Systems and Corporate Governance Principles

		Control Enviroment	Justice (fairness)	Transparency	Accountability	Responsibility
Control Enviroment	Pearson Correlation	1	,756**	,843**	,849**	,847**
	Sig. (2-tailed)		,000	,000	,000	,000
	N	197	197	197	197	197
Justice	Pearson Correlation		1	,887**	,883**	,898**
	Sig. (2-tailed)			,000	,000	,000
	N		197	197	197	197
Transparency	Pearson Correlation			1	,935**	,945**
	Sig. (2-tailed)				,000	,000
	N			197	197	197
Accountability	Pearson Correlation				1	,960**
	Sig. (2-tailed)					,000
	N				197	197
Responsibility	Pearson Correlation				,960**	1
	Sig. (2-tailed)				,000	
	N				197	197

The table above examines the relationships between the perceptions of educational foundation employees regarding the internal control system and their perceptions of corporate governance principles. Based on employee perceptions, the COSO control environment main component has a significant and positive effect on justice ($r=0.756$; $p<0.05$). The control environment has a positive effect on transparency ($r=0.843$; $p<0.05$). The control environment has a positive effect on accountability ($r=0.849$; $p<0.05$). The control environment has a positive effect on responsibility ($r=0.847$; $p<0.05$). In conclusion, it was observed that the COSO control environment main component shows a high level of positive correlation with all four corporate governance principles, indicating that internal control has a significant, high, and positive effect on corporate governance.

Due to page limitation, we cannot include similarly detailed tables of other internal control factors and corporate governance principles. Similarly;

- i. Risk assessment has a significant, high, and positive effect on corporate governance principles (fairness, transparency, accountability, responsibility) (respectively, ($r=0.896$; $p<0.05$), ($r=0.902$; $p<0.05$), ($r=0.892$; $p<0.05$), ($r=0.904$; $p<0.05$))
- ii. Control activities have a significant, high, and positive effect on corporate governance principles (fairness, transparency, accountability, responsibility) (respectively, ($r=0.836$; $p<0.05$), ($r=0.893$; $p<0.05$), ($r=0.865$; $p<0.05$), ($r=0.903$; $p<0.05$))
- iii. The Information-Communication component has a significant, high, and positive effect on corporate governance principles (fairness, transparency, accountability, responsibility) (respectively, ($r=0.931$; $p<0.05$), ($r=0.915$; $p<0.05$), ($r=0.937$; $p<0.05$), ($r=0.939$; $p<0.05$))
- iv. It was observed that Monitoring, the last internal control component has also a significant, high and positive effect on corporate governance principles (justice, transparency, accountability, responsibility) (respectively, ($r=0.901$; $p<0.05$), ($r=0.8915$; $p<0.05$), ($r=0.825$; $p<0.05$), ($r=0.833$; $p<0.05$))

Tests of Mann Whitney U and Kruskal Wallis H

The Kruskal-Wallis test is a non-parametric statistical test used to compare two or more groups for a continuous or discrete variable. Similar to one-way analysis of variance (ANOVA), this test does not assume a specific distribution of the data. The most generally accepted interpretation values used in the literature are as follows: 0.01 - < 0.06 (small effect), 0.06 - < 0.14 (medium effect) and ≥ 0.14 (large effect) (Bartlein, (2024).

Due to page limitation, we cannot include similarly detailed tables of Mann Whitney U Tests and Kruskal Wallis H Tests.

A Mann-Whitney U test was applied to examine the relationship between the gender of foundation employees and their perceptions on the main components of internal control. The Mann-Whitney U test is a non-parametric test used as an alternative to the t-test. This test compares the means of two samples from the same population and reveals whether the two sample means are equal (Bartlein, (2024). The results revealed significant differences in perceptions of the internal control system, particularly the oversight component, based on gender, while no significant differences were found in other areas. It was indicated that male foundation employees scored higher on the internal control and monitoring scales compared to female foundation employees. The differences in perspectives on corporate governance principles and evaluations of the internal control system between male and female employees indicate that perceptions of internal governance can vary depending on individual and socio-cultural factors. In particular, different approaches to monitoring processes reveal that perceptions of accountability and responsibility may show gender-based differences. This finding indicates that the impact of internal control systems on corporate governance should be evaluated not only in terms of structural variables but also in terms of demographic variables.

Similarly, the Kruskal-Wallis H test revealed statistically significant differences in perception of internal control systems based on age. It was observed that younger employees value control mechanisms compatible with more digital and flexible structures, while older employees are more inclined towards traditional control systems. This differentiation demonstrated that age is an influential variable in the interaction of internal control systems with corporate governance principles. In particular, the approaches of different age groups to the application of principles such as accountability and transparency necessitate the development of holistic strategies in governance practices. Therefore, the age variable is important for understanding how the impact of internal control on corporate governance is shaped through individual perceptions. Similarly, the Kruskal-Wallis H test indicated no statistically significant difference between education level and perception of the internal control system. The mean values obtained revealed that as the education level increases, internal control and corporate governance practices are evaluated more consciously. This suggests that differences in education among employees may affect their understanding of corporate structures, but this effect is not statistically significant. Therefore, although the education factor is not a determining variable in terms of the impact of the internal control system on corporate governance, developing awareness strategies regarding education level may be beneficial in terms of understanding governance processes and developing participatory practices.

In conclusion, the study evaluated the perceptions of foundation employees regarding the components of the internal control system in relation to fundamental corporate governance principles such as fairness, transparency, accountability, and responsibility, and statistically analyzed the significant relationships between these perceptions. The findings revealed that all components of COSO are significantly and positively correlated with corporate governance principles. In particular, the relationship between the principles of transparency and accountability and the internal control components was found to be stronger compared to other corporate governance principles.

Based on the analysis findings, main hypothesis H1 was accepted along with all its sub-hypotheses (H1.1-H1.20). Similarly, second main hypothesis H2 was also accepted. Regarding the sub-hypotheses of H2, H2.1, H2.2, and H2.5 related to gender, age, and position were accepted, while H2.3 and H2.4 related to education and years of experience were rejected.

Conclusion

This study mainly aimed to examine the impact of the COSO's internal control system components (Control Environment, Risk Assessment, Control Activities, Information-Communication, Monitoring) on corporate governance principles (justice, transparency, accountability and responsibility) through the example of a leading educational foundation in Türkiye. In the study, it was investigated whether there was a significant relationship between the perceptions of employees regarding the effects of the internal control system components on corporate governance. It was also investigated whether these perceptions differed according to demographic characteristics such as gender, age, education, length of service, position.

The study concluded that all COSO components have a significant and positive relationship with corporate governance principles. In addition, a stronger relationship was revealed between transparency and accountability principles and internal control components compared to others. Furthermore, it was indicated that these perceptions differed according to demographic characteristics. While significant differences were found in perceptions according to demographic characteristics such as gender, age and position, no differences were found according to education and working years criteria.

The study is limited by the selected sample educational foundation, the number of respondents, survey questions-answers, the applied statistical analysis method and tests. Therefore, in order to reach more general results, it is suggested to expand the studies with more diverse and larger numbers of educational foundations, employees, survey questions and statistical methods.

Acknowledgement

Part of Eslem Cömert's master thesis entitled "The effect of internal control system on corporate governance: An educational foundation example" submitted to the School of Graduate Studies in partial fulfillment of the requirements for the degree of Master of Science in Business Management and supervised by Prof. Tamer Aksoy. The partial abstract of the master thesis was presented at the Al Farabi 14th International Scientific Research and Innovation Congress, Selçuk University, Beyşehir-Konya, Türkiye on April 25-26, 2025.

Author Contributions: Conceptualization, Eslem Cömert and Tamer Aksoy; methodology, Eslem Cömert and Tamer Aksoy; formal analysis, Eslem Cömert; investigation, Eslem Cömert; resources, Eslem Cömert; writing—original draft preparation, Eslem Cömert; writing—review and editing, Eslem Cömert and Tamer Aksoy. All authors have read and agreed to the published the final version of the manuscript.

Institutional Review Board Statement: Ethical review and approval were waived for this study, due to that the research does not deal with vulnerable groups or sensitive issues.

Data Availability Statement: The data presented in this study are available on request from the corresponding author. The data are not publicly available due to privacy.

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

References

- Adeyemi, B. & Adenugma, A. (2011). Corporate governance in the Nigerian financial sector: The efficacy of internal control and external audit. *Global Conference on Business and Finance Proceedings*, 691-698.
- Akçakanat, Ö. (2012). Kurumsal Risk Yönetimi ve Kurumsal Risk Yönetim Süreci. *Süleyman Demirel Üniversitesi Vizyoner Dergisi*, 4 (7), 30-46.
- Aksoy, T. & Aksoy, L. (2020). Increasing Importance of Internal Control in the Light of Global Developments, National and International Standards and Regulations, *Journal of Turkish Court of Accounts/ Sayıştay Dergisi*, 33(118), 9-40.
- Aksoy, T. & Cömert, E. (2025). The impact of internal control system on corporate governance: A leading educational foundation example. *Al Farabi 14th International Scientific Research and Innovation Congress, Abstract Book*. April 25-26, Selçuk University, Beysehir, Konya, Türkiye, New York: Liberty Publishing House.238
- Aksoy, T. & Hacıoğlu, U. (2021). Auditing Ecosystem and Strategic Accounting in the Digital Era: Global Approaches and New Opportunities, Springer Nature, Cham, <https://doi.org/10.1007/978-3-030-72628-7>
- Aksoy, T. (2010). The role of modern internal auditing and corporate governance in Turkey: A sound comparison with the global internal auditing standards and a benchmark analysis on companies with corporate governance rating scores that listed in Istanbul Stock Exchange Corporate Governance Index, *World of Accounting Science, Muhasebe Bilim Dünyası*, 12(4), 15-45.
- Aksoy, T. (2018). Risk Odaklı İç Denetim Sürecinde Operasyonel Risklerin Belirlenip Ölçülmesine Yönelik Uygulamalı Bir 3×5 Risk Matriksi ve Risk Analiz Anket Formu Önerisi, *Mali Çözüm / Financial Analysis*, 147, 37-77
- Alloa, E.& Thoma, D. (2018). Transparency, Society and Subjectivity: Critical Perspectives. In Plagrove Macmillan. <https://doi.org/10.1007/978-3-319-77161-8>
- Arslan, M.& Alqatan, A. (2020). Role of institutions in shaping corporate governance system: Evidence from emerging economy, *Heliyon*, e03520, 6(3),. <https://doi.org/10.1016/j.heliyon.2020.e03520>
- Ayagre, P., Appiah-Gyamerah, I. & Nartey, J. (2014). The effectiveness of internal control systems of banks: The case of Ghanaian Banks. *International Journal of Accounting and Financial Reporting*, 4(2), 377-389.
- Aykaç, Ö. (2011). İç Denetim: Kurumsal Yönetimin Güvencesi, TİDE TUSİAD toplantısı, İstanbul.
- Aytekin, M.& Sönmez, A.R. (2016). Kurumsal Yönetim Uygulamalarının İşletme Performansına Etkisi, *Türk Sosyal Bilimler Araştırmaları Dergisi*, 1(2, 31-40.
- Bal, F.& Ufacak, O.E. (2023). Vekalet teorisi üzerine bibliyometrik bir araştırma. *Çankırı Karatekin Üniversitesi İİBF Dergisi*, 13(4), 1650-1670.
- Bartlein,P.J.(2024). Interpreting test statistics, p-values, and significance. (retrieved:17.04.2025), <https://pjbartlein.github.io/GeogDataAnalysis/topics/interpstats.pdf>
- Baskıcı, Ç. (2015). Kurumsal yönetim uygulamalarında iç kontrol sisteminin önemi: Borsa İstanbul şirketleri üzerine bir araştırma. *Uluslararası Yönetim İktisat ve İşletme Dergisi*, 11(25), 163–180.
- Baumgartner, S., Petersen, T.& Schiller, J. (2018). The Concept of Responsibility: Norms, Actions and Their Consequences. Available at SSRN: <https://ssrn.com/abstract=3157667> <http://dx.doi.org/10.2139/ssrn.3157667>
- Bozlak, E. (2019). İç Denetim Süreçlerinde Hile Denetimi. Yayınlanmamış YL Tezi. Marmara Üniversitesi, SBE.
- Büber, H. (2008). Kurumsal yönetim ilkelerini uygulama derecesi ile performans arasındaki ilişki: İMKB’de faaliyette bulunan aile işletmeleri üzerine bir uygulama, Dumlupınar Üniversitesi, SBE, yayınlanmamış doktora tezi. Kütahya.
- Büyükdere, F. (2015). Kurumsal Yönetim ve Firma Performansı Türk Sermaye Piyasası Üzerine Bir İnceleme. Yüzüncü Yıl Üniversitesi, YL tezi, Van.
- Camci, A. & Aksoy, T. (2024). Assessing the impact of seasonal changes on advertising revenues in the age of digitalization and sustainability: A print-visual media business example, *Bussecon Review of Social Sciences*, 6(4), 01-18. <https://doi.org/10.36096/brss.v6i4.759>
- Celayir, D. (2019). Bağımsız Denetimde Hileye İlişkin Beklenti Farklılıkları, *Der Yayınları*.
- Ceyhan, İ.& Apan, M. (2014). COSO İç Kontrol Modeli’nin yapısal eşitlik modeli ile incelenmesi: Bir hastane uygulaması. *Mehmet Akif Ersoy Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 6(10), 179-198.
- Channar, Z.A., Khan, M & Shakri, I.H. (2015). Internal control effectiveness & its relationship with financial performance. *IBT Journal of Business Studies (Formerly Journal of Management & Social Sciences)*, 11(2), 92-107.
- Collins, O.O. (2014). Effect of internal control on financial performance of micro-finance institutions in Kisumu Central Constituency, Kenya. *Scholarly Journal of Scientific Research and Essay*, 3(10), 139-155.

- COSO. (2013). Internal Control-Integrated Framework. COSO. USA: AICPA, <https://www.coso.org/Documents/COSO-CROWE-COSO-Internal-Control-Integrated-Framework.pdf> (retrieved: 21.08.2025)
- COSO. (2025). Achieving Effective Internal Control Over Sustainability Reporting: Building Trust and Confidence through the COSO Internal Control Integrated Framework, <https://www.coso.org/guidance-on-ic>
- Çelik, N.& Bedük, A. (2014). Vekalet Teorisi Yaklaşımı ile İşlem Maliyeti Arasındaki İlişki. *Sakarya İktisat Dergisi*, 3(1), 43-67.
- Çevikbaş, R. (2011). Türkiye'de İç Denetim Kurumu. *Türk İdare Dergisi* (471-472), 47-67.
- Çiçekay, H.& Demir, M. (2021). İşletmelerde COSO İç Kontrol Modeli ve Muhasebe Bilgi Sistemine Yönelik Uygulamaların Değerlendirilmesi Üzerine Bir Araştırma. *İşletme Araştırmaları Dergisi*, 13(4), 3801-3820. <https://doi.org/10.20491/isarder.2021.1357>
- Çiğdem, C. F., Güneş, R.& Çukacı, Y. C. (2018). İç kontrol sisteminin kurumsal yönetim üzerindeki etkileri: BIST Kurumsal Yönetim Endeksi kapsamındaki şirketlerde uygulama. *Mehmet Akif Ersoy Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 10(25), 421-436.
- Demirtaş, Z. (2020). Eğitim vakıflarında iç kontrol ve risk yönetimi sistemlerinin etkinliği. Yüksek lisans tezi, İstanbul Üniversitesi, Sosyal Bilimler Enstitüsü. İstanbul.
- Denkdemir, A. T. & Aksoy, T. (2024). The Perception of Fraud and Perspective on Ethics of the Media Employees in Emerging Countries in the Digital Era: Evidence from Türkiye. *Journal of Ibn Haldun Studies*, 9(2), 161-191. <https://doi.org/10.36657/ihcd.2024.124>
- DiMaggio, P.J.& Powell, W.W. (1983) The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields. *American Sociological Review*, 48, 147-160. <https://doi.org/10.2307/2095101>
- Dinçer, B. (2013). Kurumsal yönetimin farklı teoriler yoluyla değerlendirilmesi. *Dumlupınar Üniversitesi Sosyal Bilimler Dergisi*, (36), 15-26.
- Dineshkumar, S.& Kogalacumar, P. (2013). Internal control system and its impact on the performance of the Sri Lanka Telecom limited in Jaffna District. *International Journal of Advanced Computer Technology*, 2(6), 56-64.
- Doğan, M. (2018). Kurumsal Yönetimin Teorik Temelleri. *Uluslararası Yönetim Akademisi Dergisi*, 1(1), 84-96.
- Ece, O.& Güner, M. (2018). Kurumsal yönetim uygulamaları ile firma piyasa performansı ve firma finansal performansı arasındaki ilişkinin analizi. *türkiye Sosyal Araştırmalar Dergisi*, 22(3); 745-782.
- Ejoh, N.& Ejom, P. (2014). The impact of internal control activities on financial performance of tertiary institutions in Nigeria. *Journal of Economics and Sustainable Development*, 5(16), 133-143.
- Erdoğan, M. (2016). konaklama işletmelerinde iç kontrol sisteminin değerlendirilmesi ve işletme performansı ilişkisi: Bir Uygulama. Yayınlanmamış doktora tezi. Akdeniz Üniversitesi Sosyal Bilimler Enstitüsü. Antalya.
- Ertuğrul, F. (2008). Paydaş teorisi ve işletmelerin paydaşları ile ilişkilerinin yönetimi. *Erciyes Üniversitesi İİBF Dergisi*, (31), 199-223.
- Ertuna, Ö. (2015). Muhasebe teori ve uygulamalarından beklentiler. *Muhasebe ve Finans Tarihi Araştırmaları Dergisi*, (8), 5-25.
- Freeman, E.R. (2010). *Strategic Management: A Stakeholder Approach*, reprinted edition, Cambridge University Press.
- George, D.& Mallery, P. (2003). *SPSS for Windows step by step: A simple guide and reference*. 11.0 update (4th ed.). Boston: Allyn & Bacon.
- Gökçen, G.& Tipi, O. (2019). İşletmelerde Hilelerin Önlenmesine Yönelik İç Kontroller ve Bist İmalat Sektöründe Bir Araştırma. *M.U. İktisadi ve İdari Bilimler Dergisi*, 41(1), 145-169.
- Gökgöz, A. (2012). Küresel Finansal Krizin Muhasebe Temelli Nedenleri Bağlamında Kurumsal Yönetim Ve Muhasebe Meslek Etiğinin Önemi. *Atatürk Üniversitesi İktisadi ve İdari Bilimler Dergisi*, 26(3-4), 313-331.
- Görmen, M. (2019). Değer Katan Bir İç Denetim. *Erzincan Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 12 (1), 73-86.
- Graham, L. (2015). *Internal control audit and compliance- documentation and testing under the new COSO framework*, Canada: Wiley Publishing.
- Hacıoğlu, U. & Aksoy, T. (2021). *Financial Ecosystem and Strategy in the Digital Era: Global Approaches and New Opportunities*, Springer, Cham, <https://doi.org/10.1007/978-3-030-72624-9>
- Ibrahim, K.I. (2022). The role of internal control in improving the financial performance of banks. (Yayınlanmamış Yüksek Lisans Tezi). Tokat Gaziosmanpaşa University, Graduate Education Institute.
- Jensen, M. C. & Meckling, W. (1976). Theory of The Firm: Managerial Behavior, Agency Costs and Ownership Structure, *Journal of Financial Economics*, 3, 305- 360.
- Kabuye, F., Kato, J., Akugizibwe, I. & Bugambiro, N. (2019). Internal control systems, working capital management and financial performance of supermarkets. *Cogent Business & Management*, 6 (1), 1-18.
- Kaderli, Y.& Köroğlu, Ç. (2014). İşletmelerde Muhasebe Bilgi Sistemi ile Kurumsal Yönetim Anlayışı Arasındaki İlişki. *Muhasebe ve Finansman Dergisi*, (7), 21-38.
- Kanca, S. (2020). İç kontrol sistemi ile kurumsal yönetim ilkelerinin finansal performansa etkisi. Yayınlanmamış doktora tezi. Avrasya Üniversitesi Sosyal Bilimler Enstitüsü.
- Karacan, Ö. & Aksoy, T. (2022). Measuring the efficiency of the integrated internal control system and its relationship with organizational culture: Turkvaz media television case. *Al Farabi 11th International Conference on Social Sciences*, Abstracts Book, August 19-20, Atatürk University, Erzurum, Iksad Global Publications, 217-218.

- Karcıoğlu, R. & Kurnaz, E. (2017). Kamu Kurumlarında İç Denetim Faaliyetlerinin Yürütülmesinde Karşılaşılan Başlıca Sorunların Tespiti: Kamu İç Denetçilerine Yönelik Bir Araştırma, *IGU J. Soc. Sci.*, 4 (2), Spec. Iss. of ICEFM 2017, 67-88.
- Karsono, B. (2023). Good Corporate Governance: Transparency, Accountability, Responsibility, Independency dan Fairness. *Dinasti International Journal of Management Science*, 4(5), 811–821. <https://doi.org/10.31933/dijms.v4i5.1860>
- Kayım, A. (2009). Basit Kontrol Modelinden COSO Modeline İç Kontrol Süreci: Kurumsal Bazda ve Süreç Bazında Kontrollerin Tasarımına İlişkin Bir Uygulama Örneği. *Denetim Dergisi*, 3, 41-48.
- Kayisi, M. & Aksoy, T. (2024). Accounting professionals' perceptions of accounting culture and fraudulent financial reporting in the age of sustainability: Case of Istanbul province, *Bussecon Review of Social Sciences*, 6(3), 01-21. <https://doi.org/10.36096/brss.v6i3.718>
- Khitiri, B. (2017). Theories of Corporate Governance: Legal Analysis, *Journal of Law (TSU)*, 2017(2), 117-148.
- Koban, A.O.& Karakaya, G. (2022). Enron Vakası'nın Denetim, Risk Yönetimi ve İç Kontrol İlkeleri Çerçevesinde İncelenmesi. *Denetim*, (24), 91-106.
- Korga, S & Aslanoğlu, S. (2020). İç kontrol sisteminin unsurları ile risk yönetimi arasındaki ilişkinin incelenmesi: Bankacılık sektöründe bir uygulama. *Muhasebe ve Denetime Bakış*, 20(60), 95-116.
- Köse, E.& Bekci, İ. (2017). 1992-2013 COSO Modeli: İç Kontrol- Entegre Çerçevesi, *Uluslararası İşletme, Ekonomi ve Yönetim Perspektifleri Dergisi*, (7), 12-23.
- Leng, J.& Ding, Y. (2011). Internal control disclosure and corporate governance: Empirical research from Chinese listed companies. *Technology and Investment*, 2, 286-294.
- Liu, J. Y. (2018). An Internal Control System that Includes Corporate Social Responsibility for Social Sustainability in the New Era. *Sustainability*, 10(10), 3382. <https://doi.org/10.3390/su10103382>
- Luo, Y. (2005) 'Corporate Governance and Accountability in Multinational Enterprises: Concepts and Agenda. *Journal of International Management*, (11), 1-18
- Manna, A., Sahu, T.N & Gupta, A. (2019). *Governance-Led Corporate Performance: Theory and Practice*, First Edition, Emerald Publishing, ISBN: 978- 1-78973-847-6 (Online).
- Mardiasmo. (2004). *Public Sector Accounting*. Publisher Andi Yogyakarta. Government Regulation No. 58/2005 on Regional Financial Management, Jakarta.
- Meyer, J. W.& Rowan, B. (1977). Institutionalized Organizations: Formal Structure as Myth and Ceremony. *American Journal of Sociology*, 83(2), 340–363. <http://www.jstor.org/stable/2778293>
- Mohammed, A. & Aksoy, T. (2020). Assessing bank's internal control effectiveness: The case of Ghanaian listed banks. *International Journal of Research in Business and Social Science* (2147-4478), 9(4), 196-206. <https://doi.org/10.20525/ijrbs.v9i4.743>
- Mollaoğulları, B.& Öncü, S. (2020). Denetim Komitesinin İç Denetim Birimi Çalışmalarına Etkisi: Türkiye'de İç Denetim Birimi Yöneticilerinin Algısı Araştırması. *Yönetim Ve Ekonomi Dergisi*, 27(3), 405-424. <https://doi.org/10.18657/yonveek.600904>
- Muth, M.M. & Donaldson, L. (1998). Stewardship Theory And Board Structure: A Contingency Approach, *Corporate Governance: An International Review*, 6(1), 5- 28.
- Nardemir, M.S. (2014). İç Kontrol Yapısının Kurumsal Yönetim ile İlişkisi. Yüksek Lisans Tezi, İstanbul Ticaret Üniversitesi, Sosyal Bilimler Enstitüsü. İstanbul.
- OECD. (2023). G20/OECD Principles of Corporate Governance, https://www.oecd.org/en/publications/g20-oecd-principles-of-corporate-governance-2023_ed750b30-en.html (retrieved on 24.07.2025)
- Öztürk, F. (2013). Kurumsal yönetim ilkeleri ve iç denetimin rolü. Marmara Üniversitesi Sosyal Bilimler Enstitüsü. Yüksek lisans tezi, İstanbul.
- Özyiğit, H. (2023). COSO İç Kontrol Sisteminde Bilgi Teknolojisi. In *Güncel Gelişmeler Ekseninde Muhasebe ve Denetim*, . Özgür Yayın Dağıtım Ltd. Şti., 165-188.
- Ramirez, Y.& Tejada, Á. (2018). Corporate governance of universities: improving transparency and accountability. *International Journal of Disclosure and Governance*, 15(1), 29–39. <https://doi.org/10.1057/s41310-018-0034-2>
- Rittenberg, L. E. (2013). *COSO Internal Control- Integrated Framework Turning Principles Into Positive Action*, Florida: The IIA Research Foundation.
- Sabuncu, B. (2017). İşletmelerde İç Denetim ve İç Kontrol İlişkisi, *C.Ü. İktisadi ve İdari Bilimler Dergisi*, 18, 2, 161-174.
- Saglam, M. & Aksoy, T. (2020). Examining the effects of internal control system on crisis management skills: The case of IMM fire service department. *International Journal of Research in Business and Social Science*, 9(6), 274-288. <https://doi.org/10.20525/ijrbs.v9i6.922>
- SOX. (2002). Sarbanes-Oxley Act of 2002, <https://www.soxlaw.com/> (retrieved:17.08.2025)
- Tabachnick, B. G. & Fidell, L. S. (2013). *Using Multivariate Statistics*. (6th ed.). Boston, MA: Pearson.
- Tekneci, A. & Aksoy, T. (2023). The impact of internal control system effectiveness on store performance: D&R store example. 43rd EBES Conference, Program and Abstract Book: Madrid, Spain April 12-14, (pp.81). Madrid: EBES Publications.
- Tufan, H& Ege, İ. (2021). Kurumsal yönetim ilkelerinin finansal performans etkisi: Panel veri analizi. *Mersin Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 4(2), 41-57.

- Türedi, H.& Karakaya, G. (2015). COSO İç Kontrol Modeli ve Kontrol Ortamı, *Finans Politik& Ekonomik Yorumlar*, 52(602), 65-74.
- Türedi, H., Karakaya, G.& İldem,M. (2015). Kurumsal Yönetim ve İç Denetim İlişkisi.İnönü Üniversitesi SBE Dergisi, 4(1), 63-84.
- Uludağ, S. (2023). Çevresel, Sosyal ve Yönetişim İlişkili Süreçler ve İç Kontrol. *PressAcademia Procedia*, 17(1), 222-223.
- Uslu, H., Titiz, İ.& Ateş, B. A. (2011). İç kontrol sisteminin kurumsal yönetimin oluşumundaki etkinliği: Marmara Bölgesi belediye işletmelerine yönelik bir uygulama. *Muhasebe ve Finansman Dergisi*, 49, 48-54.
- Uysal, M.C. (2021). ISO31000 ve COSO Kurumsal Risk Yönetimi Karşılaştırması:Çerçevesi Anlamak. *Denetişim*, (22), 55-68.
- Uzay, S. & Aksoy, T. (2021). Relationship Between Fraud Auditing and Forensic Accounting. *Auditing Ecosystem and Strategic Accounting in the Digital Era. Global Approaches and New Opportunities*. 127-146. Springer, https://doi.org/10.1007/978-3-030-72628-7_6
- Yağlı, İ. (2019). Yönetim Kurulu Çeşitliliği-Finansal Performans İlişkisi: Türk Bankacılık Sektörü Örneği. *Hacettepe Üniversitesi İİBF Dergisi*, 37(3), 565-586.
- Yazgılı, A. (2020). Sermaye piyasası ve kurumsal yönetim, Dokuz Eylül Üniversitesi, YL tezi, İzmir.
- Yıldırım, G. (2020). Halkla İlişkilerde Paydaş Teorisi Perspektifinden Kurum İçi İletişimin Çalışanların Kurumsal Bağlılıklarına Etkisi. *Selçuk İletişim*, 13(2), 438-470.
- Zengin, A.N.& Altıok, Y. A. (2017). Kurumsal Yönetim İlkeleri ve Standartları. *Journal of International Social Research*, 10(48), <https://doi.org/10.17719/jisr.2017.1541>
- Zhang, Y., Chong, G. & Jia, R. (2020). Fair value, corporate governance, social responsibility disclosure and banks' performance. *Review of Accounting and Finance*, 19(1), 30-47. <https://doi.org/10.1108/RAF-01-2018-0016>

Publisher's Note: SSBFNET stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



© 2025 by the authors. Licensee SSBFNET, Istanbul, Turkey. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).

International Journal of Research in Business and Social Science (2147-4478) by SSBFNET is licensed under a Creative Commons Attribution 4.0 International License.