



# The impact of internal control system effectiveness on store performance in the retail media sector in the age of sustainability: Case of D&R store



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## ABSTRACT

*This study mainly aimed to examine the impact of the effectiveness of the internal control system on store performance through the example of D&R Store in the retail media sector in Türkiye. In the study, it was investigated whether the effectiveness of the internal control system has a significant and positive effect on the perception of store performance through the COSO internal control components. It was also investigated whether these perceptions differed according to demographic characteristics. Methodologically, a descriptive online survey method including a questionnaire prepared in accordance with the 5-point Likert scale was used to collect data. 302 employees responded to the survey included statements regarding demographic characteristics and COSO's main internal control components. The data were analyzed with SPSS-22. The study concluded that all COSO internal control components (control environment, risk assessment, control activities, information-communication, monitoring) have a positive and significant effect on store's performance perception. Furthermore, the study revealed that these perceptions differed according to demographic characteristics. While statistically significant differences in perceptions were found according to demographic characteristics such as gender, job position, and years of professional experience, no significant differences were found based on demographic criteria such as age and educational level. The study is considered to contribute to the literature because it is the first study to investigate the impact of the effectiveness of the COSO internal control system components on store performance together with the example of D&R Store in the retail media sector. The study is limited by the selected sample store, number of participants, survey questions-answers, the applied statistical analysis methods and tests. Therefore, in order to reach more general results, it is suggested to expand the studies with more diverse and larger numbers of stores in the retail media sector, employees, survey questions and statistical methods.*

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## Introduction

When analyzing the formation processes of internal control models, it is possible to find traces of numerous global scandals, such as economic crises, fraudulent financial reporting, ineffective internal controls, lack of corporate governance, violations of ethical principles and auditor independence, lack of corporate responsibility, and insufficient monitoring, etc.

Scandals, beginning with Enron in the US in 2001, spread and created multifaceted negative global impacts. Following these scandals, the Sarbanes-Oxley Act (SOX), enacted in the US in 2002, introduced a wide range of strict regulations aimed at disciplining the causes of scandals, primarily the lack of internal controls and the failure to ensure the effectiveness of internal control systems. In light of SOX regulations, the importance of internal controls as a major cause of scandals, increased significantly, and different internal control system models were developed in various countries (SOX, 2002).

An effective internal control systems provide significant benefits to businesses, acting as a critical safety valve in a wide range of aspects (i.e., asset protection, reliable financial reporting, accountability, fraud prevention, compliance with regulations, efficient

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operations&processes, achievement of goals, risk management, corporate governance, and sustainability, etc). Accordingly, from the audit ecosystem and effective business management, the internal control system plays also a crucial role in analyzing all significant risks faced by businesses and taking corrective, preventive, and improving measures. In this context, new systematic internal control models such as the COSO were developed to improve and enhance internal control mechanisms, which are among the causes of scandals (Aksoy & Aksoy, 2020; Aksoy & Hacıoglu, 2021).

The COSO internal control system model, which includes five main internal control components (control environment, risk assessment, control activities, information- communication, monitoring), is an advanced integrated internal control framework developed for corporate businesses and is generally accepted gold standard all over the world (COSO, 2013; Rittenberg, 2013).

The retail sector is a labor-intensive industry. Factors such as the large number of store employees, high turnover rates, and the numerous in-store and out-of-store risks involved, along with the aforementioned objectives expected from internal control, necessitate the existence of an effective internal control system in businesses. Therefore, evaluating the effectiveness of the internal control system within the store and how its impact on store performance is perceived by store employees constitutes the subject of this study.

This study mainly aimed to examine the impact of the effectiveness of the internal control system on store performance through the example of D&R Store in the retail media sector in Türkiye. In the study, it was investigated whether the effectiveness of the internal control system has a significant and positive effect on the perception of store performance through the COSO internal control components. It was also investigated whether these perceptions differed according to demographic characteristics.

The study is considered to contribute to the literature because it is the first study to investigate the impact of the effectiveness of the COSO internal control system components on store performance together with the example of D&R Store in the retail media sector.

Methodologically, a descriptive online survey method including a questionnaire prepared in accordance with the 5-point Likert scale was used to collect data. 302 employees responded to the survey included statements regarding demographic characteristics and COSO's main internal control components. The data were analyzed with SPSS-22.

Our research model was formulated to include the following 2 main hypotheses and 10 related sub-hypotheses:

*H1: The effectiveness of the internal control system positively influences the perception of store performance.*

*H2: The perception of the impact of the internal control system on store performance does not vary according to demographic characteristics.*

The sub-hypotheses of H1 (H1.1- H1.5) include the 5 main components of internal control systems (control environment, risk assessment, control activities, information-communication, monitoring); the sub-hypotheses of H2 (H2.1- H2.5) include demographic characteristics such as gender, age, education, job position, and years of professional experience.

The study consists of four sections. The first chapter includes the introduction. In the second part, theoretical and conceptual background, basic concepts, agency theory, lack of internal control system, one of the main reasons of global scandals are briefly introduced. Aims of internal control and COSO integrated internal control framework and its basic components, sustainability and the effectiveness of internal control systems in the retail media sector, and related studies in the literature are also contained in this section. The third section covers the methodology, research and an application on the impact of the internal control system effectiveness on store performance in the retail media sector, aim of the research, research model, population, sample, data, data collection, scale, hypotheses and limitations. The fourth and last part consists of statistical analysis and findings. The study ends with the conclusion and the reference list.

## **Literature Review**

### **Conceptual and Theoretical Background**

#### **Agency theory**

Agency Theory, first developed by Jensen and Meckling is one of the corporate governance theories. It explains the contractual relationship between shareholders (principals) and managers (agents). This approach attempts to explain the agency and conflict of interest issues that arise between agents and shareholders due to the tendency of managers to have more information about business operations than shareholders and to act in their own self-interest (Jensen & Meckling, 1976).

Accordingly, the internal control system is one of the primary mechanisms and 'safety valves' that should be established to eliminate or reduce conflicts of interest between principal (shareholders) and agent (managers). Therefore, in order reduce conflicts of interest between principal (shareholders) and agent (managers), and to protect the interests of shareholders, it is necessary to establish and ensure the effectiveness of various systems (such as internal control, accounting, budgeting, corporate governance, auditing, monitoring, etc.) within the corporate governance structure of businesses (Muth & Donaldson, 1998; Manna et al., 2019).

### **The increasing importance of internal control system with the Sarbanes-Oxley Act after scandals**

Lack of internal control is one of the most fundamental causes of global scandals. The Sarbanes-Oxley Act (SOX), enacted in the US in 2002 and having a global impact. The primary goal of the SOX Act is to protect investors by improving the accuracy and reliability of enterprise information disclosures (Su et. al., 2022).

This act also introduced a wide range of disciplinary regulations aimed at ensuring the effectiveness of internal control systems, in addition to other causes of scandals. With this law, the importance of establishing and ensuring the effectiveness of internal control systems within businesses has increased significantly, and the responsibilities and sanctions of all business and external stakeholders have also been greatly increased (SOX, 2002). In this context, the COSO Integrated Internal Control Framework is considered the most improved standard adopted worldwide to ensure the effectiveness of internal control systems (COSO, 2013).

#### **Definition and objectives of the internal control system**

COSO defines internal control as "a process conducted by the board of directors and other employees designed to provide reasonable assurance that operations are carried out effectively and efficiently, financial reporting is reliable, and business activities are conducted in compliance with applicable laws and regulations, in order to enable a business to achieve its objectives (COSO 2013). Accordingly, the internal control system can be defined as a system encompassing all plans, policies, and procedures determined by management to protect business assets, ensure the accuracy and reliability of information and reporting, increase efficiency in operations, and ensure compliance of activities with internal and external regulations (Saglam & Aksoy, 2020). Objectives are crucial in terms of internal control. Without objectives, control is impossible. Achieving these objectives, once defined, requires the establishment of appropriate activities and policies. An effective internal control system measures the extent to which implemented business activities and policies align with these objectives (COSO, 2013).

The general objectives of an effective internal control system can be summarized as follows: protecting business assets and records, providing accurate and reliable financial reporting, ensuring compliance of activities with business policies and legal regulations, preventing fraud, ensuring the effective and efficient use of business resources, ensuring effectiveness and efficiency in operations and business processes, achieving business goals, etc. (Toroslu, 2014; Sabuncu, 2017).

The specific objectives of an internal control system are primarily related to procedures or processes and include aspects such as authorization, authenticity, integrity, accuracy of records, classification, timeliness, and reconciliation. Authorization can be defined as the performance of transactions and activities in accordance with defined authorities and authorizations, and by authorized employees. Authenticity means documenting and recording genuine transactions that actually occur within the business. Integrity involves documenting all transactions and ensuring that nothing remains unrecorded. Accuracy of records means that all records are accurately reflected in the accounts. Classification, another specific objective, encompasses the classification of transactions in the relevant and correct accounts of the financial statements. Timeliness, another specific objective, means recording transactions on the date and period in which they occur. Reconciliation, the last specific objective of an internal control system, in short, refers to ensuring that accounts are consistent with sub-detailed accounts, and to comparisons with policy, budget, actual situation, and inter-periods (Kepekçi, 1994).

#### **COSO integrated internal control Model**

The COSO internal control system consists of five main components: Control Environment, Risk Assessment, Control Activities, Information-Communication, and Monitoring (COSO, 2013).

##### **Control environment**

COSO's control environment core component includes all standards, processes, and structures that form the basis for internal control within the organizational and corporate governance structure of a business.

##### **Risk assessment**

Another key component of internal control is risk assessment. In summary, this component refers to the process of identifying, defining, assessing, and effectively managing all existing and potential risks, including the risk of fraud, that threaten the achievement of business goals, according to established risk tolerances of the businesses (Sabuncu, 2017)

##### **Information-communication**

Information and communication is another key component of the COSO integrated internal control framework. This component encompasses the use of accurate and appropriate information in operations, as well as the establishment and effective operation of necessary communication channels for internal and external stakeholders, in order for the business to achieve its objectives and fulfill its internal control responsibilities (COSO, 2013).

##### **Monitoring**

The fifth and final core component of the COSO internal control framework is oversight. In summary, this component involves defining the company's main objectives and process objectives, conducting continuous and individual assessments of the functioning

of the internal control system, evaluating identified deficiencies in the internal control system, and sharing this information with relevant stakeholders to take necessary corrective and developmental measures (COSO, 2013)

**Table 1:** COSO Integrated Internal Control Model

<b>Components</b>	<b>Principles</b>
<b>Control environment</b>	Honesty and commitment to ethical values Fulfillment of supervisory responsibilities Defining duties, authorities, and responsibilities Commitment to competence Accountability
<b>Risk assessment</b>	Defining objectives Identifying, defining, and assessing risks Assessing fraud risk Detecting and analyzing significant deviations and changes
<b>Control activities</b>	Identifying and developing control activities Identifying and developing general technological controls Effective implementation of control activities through policies and procedures
<b>Information-communication</b>	Use of relevant and appropriate information Establishing and effectively operating internal communication channels for internal stakeholders Establishing and effectively operating external communication channels for external stakeholders
<b>Monitoring</b>	Defining objectives Ongoing and separate specific assessments regarding internal control Assessing of internal control system deficiencies and communication with relevant stakeholders

**Source:** (COSO, 2013; Saglam & Aksoy, 2020)

In the digital age, having an effective internal control system has become much more important in terms of achieving goals and ensuring sustainability (Aksoy & Hacıoğlu, 2021).

### **Sustainability and the effectiveness of internal control systems in the retail media sector**

From a sustainability perspective, the effectiveness of internal control systems has become increasingly important for businesses in the retail media sector and ecosystem. Ensuring the effectiveness of internal control systems has become a vital safety valve for achieving goals, managing operations efficiently, and achieving sustainability. An effective internal control system creates a wide range of positive impacts on various dimensions of a business. There is a strong relationship between internal control effectiveness and the sustainable development of businesses.

In addition to the financial, operational, and economic dimensions, the effects of an effective internal control system on sustainability also encompass the Environmental-Social-Governance (ESG) dimensions of the business. In other words, the positive effects arising from the activation of the internal control system can be briefly summarized as follows: Newer and more efficient business models, transparency and trust in all income, expenses, budgets, and records, data security, cybersecurity, confidentiality, compliance with legal regulations, effective risk management including fraud risk, ESG dimension, accurate and reliable ESG reporting, increased investor and stakeholder confidence, deterrence of unethical practices, increase in brand and share value, etc. (Su et. al., 2022).

### **Related Studies in the Literature**

Some of the studies in the literature are briefed below.

Asiligwa and Rennox (2017) investigated whether there is a significant and positive relationship between the internal controls and financial performance of commercial banks. The sample consisted of 43 commercial banks operating in Kenya. Frequency tables, correlation tables, and regression tables were used. The study concluded that there is a significant and positive relationship between the internal controls and financial performance of commercial banks in Kenya, and that the absence of internal controls leads to negative financial performance. Furthermore, the study revealed that commercial banks that effectively implement internal control elements (control environment, risk assessment, control activities, information-communication, monitoring) have relatively better financial performance. The study also indicated that relatively larger banks have relatively better financial performance than medium and small banks.

The study by Umar and Dikko (2018) investigated whether there is a significant relationship between the main components of internal control (i.e. control environment, risk assessment, control activities, monitoring) and bank performance. In the study, the COSO's main components of internal control were determined as independent variables, and bank performance as the dependent variable. Data were collected using a survey method and applied to 223 employees of commercial banks (i.e. managers of all branches, internal

control officers, security officers) in Nigeria and analyzed using SPSS-23. The study revealed a significant relationship between the main components of internal control (control activities, control environment, monitoring, risk assessment) and bank performance, indicating that internal control elements improve bank performance. However, no significant relationship was found between the information-communication internal control component and bank performance.

Lagat (2018) investigated the impact of internal control on the financial performance of state-owned sugar companies in Kenya. The study population consisted of 5 state-owned sugar companies in Kenya. Data were collected through a structured questionnaire (administered to senior management employees working in accounting, human resources, procurement, and security departments) and analyzed using SPSS-22. The study concluded that the internal control system has a positive and significant effect on the financial performance. Accordingly, an increase in the control environment resulted in an 81% increase in financial performance; while an increase in the risk assessment and information-communication components resulted in a 23.5% and 1.8% increase in financial performance, respectively. However, the study indicated that a one-unit increase in the control activities component resulted in a 4.5% decrease in financial performance, and that there was a negative relationship between the control activities component and performance.

The study by Oppong et al. (2016) examined the level of internal control and how internal control affects performance in seven faith-based non-governmental organizations (NGOs) in Ghana. The study used the five main components of the COSO internal control framework as independent variables and the performance of the NGOs as the dependent variable. Data were collected from 118 participants via survey and analyzed using SPSS-20. The study concluded that, with the exception of risk assessment, the four main components of COSO internal control functioned satisfactorily in the existing internal control systems. The study also indicated that internal control systems improved the performance of faith-based NGOs in terms of economy and efficiency, but did not make them effective. It suggested that for effectiveness, NGOs should have standardized risk assessment strategies and measures covering all activities and processes.

The study conducted by Kanca (2020), aimed to examine the impact of the internal control system on financial performance. It was conducted on 41 companies included in the BIST (XKURY) Corporate Governance Index. The study utilized a survey method, various databases, and company financial statements. In the study, the COSO internal control components were used as independent variables, and financial performance as the dependent variable. Data were analyzed using SPSS. The study concluded that the effectiveness of the internal control system has a positive and significant effect on financial performance.

Ejoh and Ejom (2014) investigated whether there is a significant relationship between internal control activities and financial performance in higher education institutions in the example of Cross River State College of Education-Akamkpa in Nigeria. The COSO internal control framework and control activity were used as independent variables, and institutional performance as the dependent variable. utilized survey, face-to-face interview, document review, and stratified sampling methods were used to collect data. Data were analyzed using simple percentages, tables, correlation coefficients, and z-scores. The study concluded that there is no significant relationship between control activities and financial performance.

Yetiş (2017) investigated the effectiveness of internal control systems in hotel businesses and whether the COSO internal control key components have an impact on business performance. Data was collected using a survey method and administered to employees (managers, accounting and finance department managers, and employees) of 4 and 5-star hotel businesses with tourism business licenses operating in the Central Anatolia region. 55 completed forms were analyzed using necessary statistical tests (t-test, ANOVA, correlation test, regression, etc.). The study concluded that the control environment, risk assessment, and information-communication components had no effect on performance. However, the study revealed that control activities and monitoring components had a positive impact on performance. Furthermore, based on the findings, control activities were found to have a 58% impact on business performance, while the monitoring component had a 65% impact.

In Erdoğan's study (2016), the relationship between internal control systems and business performance in 47 five-star accommodation establishments operating in the Belek and Kundu tourism regions of Antalya was investigated. COSO's main internal control components were defined as independent variables, while business operating time, the presence of an internal audit unit, and hotel bed capacity were defined as dependent variables. Data were collected from employees (managers and employees of all departments) of the sample hotels through face-to-face interviews and surveys. Data collected from 202 surveys were analyzed using SPSS-16. The study concluded that the elements of the internal control system had a positive effect on business performance. Accordingly, the study also indicated that business bed capacity, business operating time, and the presence of an internal audit unit had a positive effect on business performance.

Mohammed (2020) examined the impact of internal control systems of publicly listed banks operating in Ghana on bank performance. The main components of the COSO internal control framework (i.e. control environment, risk assessment, control activities, information-communication, monitoring) were determined as dependent variables, while the financial and non-financial performance of the banks was determined as independent variables. Data were collected through a survey method applied to employees (managers and employees of internal control and internal audit departments) of regional branches of 23 banks operating in Ghana, which constituted the study's universe. SPSS-25 was used for the analysis of the data and necessary tests (t-test, correlation, regression, etc). The study revealed a positive and significant relationship between the COSO information-communication component of internal control and financial performance. In contrast, all other main internal control components were found to have no effect on the

dependent variables. Furthermore, the study indicated a positive and significant relationship between the information-communication internal control component and non-financial performance, while denoting to a negative performance relationship between the control environment, risk assessment, control activities, and monitoring.

In another study conducted by Mohammed and Aksoy (2020) it was examined the effectiveness of internal control systems of listed banks operating in Ghana based on COSO internal control framework (Control Environment, Risk Assessment, Monitoring). Methodologically, a survey method covering a questionnaire used to collect and SPSS-25 used to analyze. The targeted respondents were the managers and the employees of internal control and internal audit departments. the study revealed that Ghanaian banks have effective internal control systems and that these systems function efficiently. It also indicated that strong controls existed in the control environment, risk assessment, and monitoring activities of internal control. Because banks are exposed to higher risk compared to all other financial institutions, the risk assessment component was found to have a lower average value compared to the control environment and monitoring activities.

Mawanda (2008) investigated the relationship between internal control systems (control environment, internal audit, and control activities) and financial performance in a higher education institution in Uganda using a survey method. The study revealed a significant relationship between the control environment, internal audit function, and control activities and financial performance. Furthermore, the study also indicated that the control environment, internal audit, and control activities are related to liquidity, accountability, and reporting.

The study by Mbilla et al. (2020) examined the impact of the information-communication and oversight components of internal control system on banks listed on the Ghanaian stock exchange. Data were collected through financial statements of 12 banks and a survey of 300 bank representatives, and ANOVA and regression analyses were applied. The study revealed that the internal control system has a positive impact on the financial performance of the banks. Furthermore, the study found a positive and significant relationship between the information-communication and oversight components of internal control and financial performance.

The study by Mary et al. (2014) investigated the impact of internal control systems on the financial performance of sugarcane outgrower companies in Kenya. Primary data was collected by a descriptive correlational survey covering all finance managers and heads of internal audit of 9 sugarcane growing companies. Secondary data was obtain from annual reports, publications, and documents and all data were analyzed using SPSS-19. The study concluded that the COSO internal control system has an overall positive and significant effect on financial performance.

Ahmed and Muhammed (2018) examined the impact of internal controls on the financial performance of Asiacell, a telecommunications company operating in the northern region of Iraq. In other words, the study explored the relationships between internal controls and financial performance. Primary data were collected from 30 employees via a survey method, and secondary data were collected from financial statements. All data were analyzed using SPSS-22. Statistical analysis was performed using multiple regression, one-way ANOVA, and correlation analyses. The study concluded that there is a positive relationship between financial performance and the control environment, risk assessment, and control activities components components of the COSO internal control system. Furthermore, the study also revealed a negative correlation between financial performance and the information-communication and oversight components of the COSO internal control system.

The research conducted by Hanoon et al. (2021) investigated the impact of internal control on the financial performance of banks in Iraq. Data was collected from 365 employees (containing general managers, chief financial officers, accountants, auditors, audit committee) from 77 banks in the Iraqi banking sector using a survey method and analyzed with SPSS and Smart PLS. The study concluded that all COSO internal control components (i.e., control environment, risk assessment, control activities, information-communication, supervision) have a significant positive impact on financial performance. Accordingly, the study also revealed that the lack of internal controls results in negative financial performance.

Nwobodo et al. (2020) examined the relationship between the internal control system and non-financial performance (bank efficiency and operational performance) of selected deposit banks in Nigeria. The study population and sample consisted of 292 managers who responded from all senior and middle-level strategic managers of 22 international and national deposit banks in Nigeria. The study revealed that the internal control system has a positive and significant effect on the bank efficiency and operational performance of deposit banks.

Muhunyo and Jagongo A. O. (2018) investigated the impact of internal control systems on financial performance in public higher education institutions in Nairobi City County. Data were collected from a sample of 96 employees using a survey method. The study revealed that the COSO control environment, risk assessment, control activities, and information-communication internal control components have a significant and substantial impact on the financial performance of higher education institutions, and that the internal control components together explain 99.1% of the variations in financial performance.

Ibrahim et al. (2017) examined the impact of internal control systems on financial performance in a sample of fifty participants from five healthcare institutions in Ghana. The study concluded that there is a positive relationship between the overall internal control system and the financial performance of healthcare institutions. In terms of sub-components, only three internal control components (i.e control activities, internal audit, monitoring) had a significant and positive relationship with financial performance, while the

other two components (control environment, information-communication) had an insignificant effect on financial performance. Furthermore, the study concluded that healthcare institutions investing in effective internal control systems have improved financial performance compared to healthcare institutions with weak internal control systems.

Muraleetharan (2011) investigated whether internal control systems improve the financial performance of private and public institutions in the Jaffna District of Sri Lanka through a sample of 181 employees. Data were collected through surveys, observations, and personal face to face interviews. The study concluded that perceived internal control has a significant impact on financial performance. Furthermore, the study revealed that, based on key components, risk assessment, control activities, and monitoring positively impacted financial performance, while control environment and information-communication components negatively impacted financial performance.

The study by Worku (2018) aimed to examine the impact of the internal control system of commercial banks in Ethiopia on financial performance through its Risk Assessment, Control Activities, and supervision components. The study population and sample consisted of 8 banks and 240 participants from 17 commercial banks in Ethiopia. Data were collected using a survey method and financial records and analyzed with SPSS. The study concluded that there is a positive and strong relationship between control activities and financial performance. A positive relationship was also found between risk assessment and financial performance. However, the study revealed no significant relationship between the monitoring component of internal control and financial performance.

Another study by Muthusi (2017) investigated the effects of COSO internal control components on the financial performance of commercial banks in Kenya. Data collection was carried out using a survey method applied to 129 participants and audited financial reports from 43 commercial banks, and analyzed using SPSS-22. The study revealed a positive and significant relationship between the control environment, risk assessment, control activities, information-communication, and oversight elements and the financial performance of commercial banks.

Omar (2021) examined the relationship between the effectiveness of the COSO internal control system and the financial performance of four commercial banks operating in Libya. The sample consisted of 406 employees from the banks' audit units and audit committees. Data were collected through surveys in addition to annual reports published by the Central Bank of Libya, and analyzed using SPSS-26. The study revealed a significant and positive relationship between the control environment, risk assessment, information-communication, and supervision components of COSO and financial performance, while indicating no significant relationship between control activities component and financial performance.

The study by Ibrahim (2022) investigated whether internal control components have an impact on improving the financial performance of banks in Iraq. Data was collected from 186 bank managers (branch managers, assistant managers, internal auditors) using a survey method and analyzed using SPSS and Amos 24. The study concluded that the elements of internal control, namely control environment, risk assessment, control activities, information-communication, and monitoring, positively affect the financial performance of banks.

## **Research and Methodology**

### **Aim of the Research**

This study mainly aimed to examine the impact of the effectiveness of the internal control system on store performance through the example of D&R Store in the retail media sector in Türkiye. In the study, it was investigated whether the effectiveness of the internal control system has a significant and positive effect on the perception of store performance through the COSO internal control components (control environment, risk assessment, control activities, information-communication, monitoring). It was also investigated whether these perceptions differed according to demographic characteristics such as gender, age, educational level, job position, years of professional experience.

### **Importance of the study**

The study is considered to contribute to the literature because it is the first study to investigate the impact of the effectiveness of the COSO internal control system components on store performance together with the example of D&R Store in the retail media sector.

### **Research Method, Population, Sample, Data Collection, Scale Hypotheses**

The study population and sample consisted of 302 employees of D&R Store, a company operating in the retail media sector in Türkiye, who responded to the survey. Methodologically, a descriptive online survey method with a 5-point Likert scale questionnaire was used to collect data. A correlational survey model is a method that examines the existence and direction of a relationship between two or more variables. The questionnaire included 39 statements regarding demographic characteristics and the core internal control components of COSO.

Data were analyzed using SPSS-22. The core components of the COSO internal control framework, namely control environment, risk assessment, control activities, information-communication, and monitoring, were determined as independent variables, while store performance (financial and non-financial) was determined as the dependent variable.

To comply with the page limit of the article, instead of detailed tables within the scope of statistical analysis, mostly only the main findings of the analyses were summarized.

In the relevant sections of the study, a wide variety of statistical tests and analysis methods such as frequency, percentage, mean, standard deviation, Cronbach's Alpha, skewness and kurtosis tests, correlation, regression, t-test, Variance Analysis -One-Way ANOVA, Post-hoc (Scheffe) Test, etc. (George & Mallery, 2003; Tabachnick & Fidel, 2013; Bartlein, (2024) were performed to analyze the data in detail

Therefore, the research model covers 2 main hypotheses and 10 sub-hypotheses below.

**Table 2: Hypotheses**

<b>H1:</b> The effectiveness of the internal control system has a positive impact on the perception of store performance.	
<b>H2:</b> The perception of the impact of the internal control system on store performance does not vary according to demographic characteristics.	
H1.1: The Internal Control environment component has a positive effect on the perception of store performance.	H2.1: The perception of the impact of the Internal Control System on store performance does not differ according to the gender
H1.2: The Risk Assessment component has a positive effect on the perception of store performance.	H2.2: The perception of the impact of the Internal Control System on store performance does not differ according to the educational level
H1.3: The Internal Control Activities component has a positive effect on the perception of store performance.	H2.3: The perception of the impact of the Internal Control System on store performance does not differ according to the title
H1.4: The Information-Communication component has a positive effect on the perception of store performance.	H2.4: The perception of the impact of the Internal Control System on store performance does not differ according to the age
H1.5: The Supervision component has a positive effect on the perception of store performance.	H2.5: The perception of the impact of the Internal Control System on store performance does not differ according to the years of professional experience

### Limitations

The study is limited by the selected sample store, number of participants, survey questions-answers, the applied statistical analysis methods and tests. Therefore, in order to reach more general results, it is suggested to expand the studies with more diverse and larger numbers of stores in the retail media sector, employees, survey questions and statistical methods.

## Findings and Discussions

### Statistical Analysis and Findings

The SPSS-22 was used to implement the statistical analyses. To avoid exceeding the page limit, instead of detailed tables indicating the statistical tests, only the main findings and briefed results were contained.

When the mean scores of the scale and its sub-dimensions are examined, it is seen that the mean score of the internal control system effectiveness scale is  $128.03 \pm 25.46$ . Considering that the highest possible score on the scale is 170, the resulting score is at the "agree" level. Accordingly, a large majority of the participants stated that the effectiveness of the internal control system is high.

In the analysis of the data, a wide variety of statistical tests and analysis methods were applied to the relevant detail. First, complementary statistics such as frequency, percentage, mean, and standard deviation were calculated. Cronbach's Alpha test was performed for the reliability analysis of the data. Skewness and Kurtosis tests were used to measure whether the data were normally distributed.

The first main hypothesis of the study is to measure whether the effectiveness of the internal control system has a positive effect on the perception of store performance through the COSO internal control components; for this purpose, correlation tests and regression tests were applied.

The second main hypothesis of the study was to measure whether the perception of the impact of the internal control system on store performance differed according to demographic characteristics. For this purpose, T-test, Analysis of Variance (One-Way ANOVA), and Post-hoc (Scheffe) Test were applied. In the analyses performed,  $p < 0.05$  were considered statistically significant.

### Frequency and Percentage Values, Cronbach's Alpha Reliability Test Results

The Cronbach's Alpha test, applied for reliability analysis of the data, revealed that the Cronbach's Alpha coefficient for the effect of internal control system effectiveness on store performance is a very high level of confidence, at 0.938.

The distribution of frequency and percentage values of the participants is shown below.

**Table 3:** Frequency and Percentage Values of the Sample Group

<b>Criteria</b>	<b>Demographic</b>	<b>N</b>	<b>%</b>
<b>Gender</b>	Male	202	66.89
	Female	100	33.11
<b>Age</b>	18-25	7	2.32
	25-35	141	46.69
	35-45	145	48.01
	45 +	9	2.98
<b>Education</b>	Primary – High School	92	30.46
	Bachelor	197	65.23
	Graduate (MBA, Phd)	13	4.30
<b>Years of Professional Experience</b>	<5	23	7.62
	5-10	99	32.78
	10-15	104	34.44
	15-20	59	19.54
	20 +	17	5.63
<b>Position</b>	Assistant Store Manager	107	35.43
	Store Manager	164	54.30
	Manager	24	7.95
	Specialist	7	2.32

According to the table below, 66.89% of the 302 employees who participated in the survey were male and 33.11% were female. Regarding age ranges, 2.32% were between 18-25 years old, 46.69% between 25-35 years old, 48.01% between 35-45 years old, and 2.98% were 45 years and older. According to their educational level, it was determined that 30.46% had completed primary or secondary education, 65.23% had a bachelor's degree, and 4.30% had a graduate degree (master and Phd). Based on years of professional experience, 7.62% had less than 5 years, 32.78% had 5-10 years, 34.44% had 10-15 years, 19.54% had 15-20 years, and 5.63% had more than 20 years of professional experience. It was also found that 54.30% were store managers, 35.43% were assistant store managers, 7.95% were managers, and 2.32% were specialists according to the titles.

### **Correlation and Regression Analyses**

As mentioned above, the study is based on two main hypotheses. Main Hypothesis-1 (H1) is that “The effectiveness of the internal control system has a positive effect on the perception of store performance.” The sub-hypotheses of Main Hypothesis-1 concern whether the five elements constituting the COSO internal control system individually have a positive effect on the perception of store performance. Correlation and regression tests were applied to main Hypothesis-1 and its sub-hypotheses.

The correlation analysis conducted regarding Main Hypothesis-1 included the relationships between the variables. A positive and highly significant correlation was determined between the effectiveness of the internal control system and the perceived impact on store performance. A positive and significant correlation was found between the control environment and the perceived impact on store performance, and a significant correlation was found between risk assessment and the perceived impact on store performance. A significant correlation was also observed between control activities and the perceived impact on store performance, a positive and significant correlation was observed between information communication and the perceived impact on store performance, and a significant correlation was observed between the monitoring element and the perceived impact on store performance. Accordingly, a moderately significant relationship was found between the perceived impact of internal control components on store performance.

Regression testing was also applied to Main Hypothesis-1 and its related sub-hypotheses. According to the regression analysis regarding the effect of internal control system effectiveness on store performance perception, the model was found to be statistically significant. Based on the results, it was observed that internal control system effectiveness positively and significantly affects store performance perception. Therefore, H1 is accepted. In other words, internal control system effectiveness has a positive effect on store performance perception.

According to the regression analyses applied separately to the sub-hypotheses (i.e. H1.1, H1.2, H1.3, H1.4, and H1.5), it was revealed that the models were statistically significant. Accordingly, it was indicated that COSO core internal control components, consisting of control environment, risk assessment, control activities, information-communication, and monitoring individually and positively affected the perceived store performance. In this case, all the sub-hypotheses of H1 were accepted.

## **Results of T-test, Scheffe test and Variance-ANOVA Analysis**

T-test, Analysis of Variance (ANOVA) and Scheffe test were applied to the Main Hypothesis-2 and its sub-hypotheses. Main Hypothesis-2 concerns whether the perception of the effect of the internal control system on store performance varies according to demographic characteristics.

Based on the analyses of T-test, Variance (one-way ANOVA), and Scheffe tests, it was concluded that perceptions regarding the impact of the internal control system on store performance differed according to gender, title, and years of professional experience. Therefore, hypotheses H2, H2.1, H2.3, and H2.5 were rejected, and the differences in perceptions are summarized below:

- i. Women's perception level is significantly higher than men's.
- ii. Assistant store managers and specialists have a higher perception level than store managers.
- iii. Those with 5-10 years of professional experience have a higher perception level than those with 15-20 years of professional experience.

On the other hand, it was revealed that the perception of the impact of the internal control system on store performance did not differ according to the age and education of the participants. Therefore, hypotheses H2.2 and H2.4 were accepted.

In conclusion, this study, conducted with the participation of employees working within D&R Store, determined that the components of the internal control system—control environment, risk assessment, control activities, information-communication, and monitoring—have a positive and significant impact on the perception of store performance (Tekneci & Aksoy, 2023).

## **Results of the Hypotheses**

According to the summarized analysis results and findings above, the main hypothesis H1 is accepted along with all its sub-hypotheses (H1.1, H1.5). Furthermore, the main hypothesis H2 is rejected along with its sub-hypotheses H2.1, H2.3, and H2.5, while H2.2 and H2.4 are accepted.

## **Conclusion**

This study mainly aimed to examine the impact of the effectiveness of the internal control system on store performance through the example of D&R Store in the retail media sector in Türkiye.

In the study, it was investigated whether the effectiveness of the internal control system has a significant and positive effect on the perception of store performance through the COSO internal control components. It was also investigated whether these perceptions differed according to demographic characteristics.

The study concluded that all COSO internal control components (control environment, risk assessment, control activities, information-communication, monitoring) have a positive and significant effect on store's performance perception.

Furthermore, the study revealed that these perceptions differed according to demographic characteristics. While statistically significant differences in perceptions were found according to demographic characteristics such as gender, job position, and years of professional experience, no significant differences were found based on demographic criteria such as age and educational level.

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**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.

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