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INTERNAL CONTROL BEYOND FINANCIAL REPORTING – THE ROLE AND PERCEPTION OF INTERNAL CONTROL INSIDE ORGANIZATIONS IN BUSINESS OPERATIONS

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Abstract

This study examines the perceptions of employees regarding the internal control system within an organisation, emphasising its significance beyond financial reporting. The research employs a quantitative approach to identify misconceptions about internal controls and highlight their characteristics. Most results were anticipated, including the necessity and significance of an internal control system within a company and its role in mitigating potential risks. However, the study also presents intriguing and thought-stimulating findings. The insights gained from this study are valuable for companies seeking to enhance their internal control systems, with the aim of improving efficiency, transparency and alignment with strategic objectives.

Keywords

Internal Control, Operational Efficiency, SOX, COSO, Employees, Perception

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1. Introduction

This study examines the perceptions of employees about the internal control system of a company, with the objective of enhancing operational efficiency and aligning the internal controls with the broader organisational objectives. As a risk and compliance analyst, I am motivated to improve both my current daily work and the company's practices by conducting this study, which aims to enhance the effectiveness of internal control systems. Furthermore, the company's board members have expressed their interest in this study, as it aims to enhance the company's future performance. At the beginning of my tenure as an internal controller, I discovered that the stakeholders subject to control testing found the process tedious and uncooperative, perceiving it as a burden. As time progressed and following the implementation of a consulting company, the sessions became significantly more effective and dynamic. This is in alignment with the assertion put forth by (Shin and Park 2020) that the expertise of the internal control manager has a significant impact on the outcomes. Although this is related to the matter of this study, the core issue is the perception of the entire internal control system, which represents the final stage of the process. The process comprises four principal stages: process mapping, risk assessment, control allocation and control monitoring. The objective is to assess the perception of the entire process. The research was based on a comprehensive literature review and a quantitative research method that includes an open questions section that provides valuable qualitative insights.

The literature review granted several intriguing findings that provided a conceptual framework for the subsequent research. Some of the findings from the research were consistent with the derived hypothesis, while others were not, which was an intriguing aspect of this project. Furthermore, some of the quantitative findings were contradicted by the qualitative findings, emphasising the value of having a qualitative approach. Most of the studies used only referenced internal control for financial reporting, and only assessed the necessity of such

control based on factors such as implementation costs and the potential risks associated with its absence. There was a notable absence of consideration of employee perspectives on this matter which prompted to the conduction of the study.

2. Literature Review

2.1. Internal Control in Organizations

Internal control has evolved into a crucial aspect of organizational strategy, extending beyond regulatory compliance to enhance operational efficiency, risk management, and corporate governance. Its integration with Enterprise Risk Management (ERM) fosters risk-aware cultures, embedding controls into daily decision-making to optimize resource management and align with strategic goals (Chesley, Waguespack, and Mehm 2024). This approach strengthens transparency and trust across organizational levels. The updated Committee of Sponsoring Organizations (COSO) Internal Control - Integrated Framework retains its foundational components - control environment, risk assessment, control activities, information and communication, and monitoring while expanding to operational and compliance objectives. This reflects the need for adaptable internal control systems among globalization and technological advancements (Janvrin et al. 2012). The framework links internal control to broader operational goals, providing tools to evaluate and improve these systems comprehensively. Internal Control Weaknesses (ICWs) over financial reporting harm operational efficiency by disrupting forecasting, cost estimation, and resource allocation (Cheng, Goh, and Kim 2018). For operationally complex or financially constrained firms, these weaknesses can hinder decision-making and reduce customer satisfaction (T. Chen et al. 2024). Smaller firms, however, benefit significantly from improved internal controls, which streamline operations and offset the high costs of regulations like SOX (Cheng, Goh, and Kim 2018).

Leadership and organizational culture also influence the effectiveness of internal controls. Conservative political ideologies in top management teams promote stronger controls and higher-quality financial reporting (Abernethy et al. 2023). Additionally, internal control managers with diverse and high task-related knowledge contribute to operational efficiency, though excessive control can diminish effectiveness (Shin and Park 2020). However, over-control poses risks, creating inefficiencies when internal controls are misaligned with operational needs. Research suggests an inverted U-shaped relationship between internal controls and efficiency, where both insufficient and excessive controls harm performance (H. Chen, Li, and Zhang 2021). Excessive focus on controls can detract from core operations, lowering product quality and customer satisfaction (T. Chen et al. 2024). These challenges are particularly evident in non-state-owned enterprises (non-SOEs), which use internal controls to enhance efficiency, compared to state-owned enterprises (SOEs), which face unique regulatory pressures (H. Chen, Li, and Zhang 2021).

2.2. COSO and SOX404 Frameworks

The COSO framework has been instrumental in helping companies improve internal controls to reduce fraud and manage enterprise risk, particularly in compliance with the Sarbanes-Oxley Act (SOX). A study by (Tadesse, Rosa, and Parker 2022) explored the adoption of the updated COSO 2013 framework, revealing that companies with existing internal control weaknesses, particularly IT-related, were slower to implement it. However, those that did adopt COSO 2013 experienced a reduction in material weaknesses, especially in IT controls, highlighting its role in enhancing internal control robustness and governance practices. Despite its usefulness for medium and large companies, smaller firms often lack the resources to fully implement COSO and must instead rely on best practices and training to mitigate risks and achieve objectives (Frazer 2016).

A study also examined the impact of the SOX Act on financial reporting integrity for EU companies cross-listed in U.S. markets, focusing on Sections 302 (financial reporting certification) and 404 (internal control assessments). Compliance with SOX 302 has significantly improved financial reporting integrity, but compliance with SOX 404 showed mixed results, with high costs that did not always yield better outcomes, particularly for non-U.S. companies facing multiple regulatory frameworks (Bajra et al. 2023). While SOX improves financial reporting in the U.S., its benefits for cross-listed EU firms are less clear. However, effective internal controls, as noted by (Cheng, Goh, and Kim 2018), can improve operational efficiency, helping offset the costs of SOX 404 compliance.

Additionally, a study by (Imdieke, Li, and Zhou 2023) found that small firms with audits experienced higher operational efficiency due to the detection of material weaknesses and auditors' recommendations, further underscoring the varying impacts of SOX 404 on different regulatory environments.

2.3. Practical examples of Internal Control

2.3.1. US Federal Agencies: The imperative of achieving more than less has been a source of discussion, with federal agencies eyeing the need to integrate internal control and risk management with strategy and performance (Chesley, Waguespack, and Mehm 2024) to ensure efficiency and effectiveness of the operations. This study shows us a point of view from a governmental entity in which Internal Controls and ERM apply and how, not only efficient but, needed for the operation they turn out to be. Although implementing it comes with a long journey attached, its benefits become visible by the enrichment of decision-making, resource optimization, culture of responsibility and so on (Chesley, Waguespack, and Mehm 2024).

2.3.2. Telecom Company: The implementation of an internal control life cycle at an Indonesian telecom company (Company Y) demonstrates how internal controls can evolve from a regulatory obligation into an integral part of the business's operational strategy (Puspasari and Yuwono 2013). Company Y adopted the SOX act and the COSO framework to ensure compliance and improve operational efficiency. Initially viewed as a regulatory requirement, internal controls at Company Y became a tool for enhancing ERM and operational efficiency over time. By 2004, the company began integrating internal controls into its business processes and organizational culture, marking a shift from mere compliance to strategic integration. Company Y's success in implementing an integrated internal control life cycle reflects the importance of embedding controls into daily business operations. The reduction in control failures and the improvement in audit outcomes demonstrate the tangible benefits of robust internal control systems. The system not only complied with SOX and COSO requirements but also became a model for other telecom companies operating in similar regulatory environments (Puspasari and Yuwono 2013).

2.3.3. Power Trading Institutions: The construction and application of a compliance risk monitoring system for power trading institutions further emphasize the adaptability of internal controls across industries. Set against the backdrop of China's electric power system reforms, this study highlights the unique compliance risks faced by power trading entities, including financial, legal, operational, and market risks (Lyu et al. 2023). To address these challenges, power trading institutions developed a dynamic, technology-driven internal control system aimed at monitoring and mitigating compliance risks in real time. A significant aspect of this system is its use of advanced technologies such as big data and automation. The system integrates real-time data monitoring and risk assessment with early warning mechanisms, which allows power trading institutions to swiftly respond to emerging risks. Automating risk identification and assessment minimizes human errors and enhances the accuracy of

compliance oversight. The system's feedback and continuous improvement mechanisms ensure that risk management remains dynamic and responsive to evolving business needs (Lyu et al. 2023).

2.4. Process Mapping

Process mapping is of vital importance in the context of internal controls, as it serves to elucidate workflows, identify potential risks, and emphasise the significance of critical control points. By employing a visual approach to deconstructing processes, it ensures that the controls in place align with the objectives of the organisation. In a dynamic business environment, process mapping provides a valuable tool for adaptability, enabling organisations to refine their controls and address emerging risks in a timely manner, ultimately enhancing efficiency and reliability. This study emphasises the importance of process mapping in strengthening internal controls in various areas.

In project management, (Imran and Soomro 2022) demonstrate how the integration of agile methodologies into the structured PMBOK framework provides organisations with predefined control points throughout the project lifecycle. By embedding review checkpoints into each sprint, process mapping ensures consistent quality, risk mitigation and documentation, which are critical for effective internal controls. In healthcare, (Vaccari et al. 2017) illustrates how process flow mapping at the Gardone Val Trompia hospital in Italy improved internal controls in waste and water resource management. The study identified inefficiencies, such as excessive water consumption and poor waste segregation, and implemented controls such as monitoring mechanisms and compliance audits. This approach not only reduced environmental risks, but also optimised resource use and ensured regulatory compliance. Similarly, in municipal governance, (Süreçlerin et al. 2017) highlight how process-oriented management improves operational efficiency and accountability. Using business process modelling notation (BPMN),

the study mapped workflows, identified bottlenecks and introduced internal controls at critical points. This mapping enabled real-time monitoring, clarified roles and responsibilities, and supported compliance, demonstrating its usefulness in public sector management. Taken together, these cases highlight the transformative role of process mapping in embedding robust internal controls, improving efficiency and aligning operations with strategic and compliance goals.

3. Research Methodology

The research methodology of this work project was carried out using only a quantitative approach, based on a questionnaire sent to the company's employees to collect the necessary data for analysis, followed by the identification of independent and dependent variables to carry out the statistical tests to assess the perception of the given employees regarding the internal control system currently in place in the company. A section of open questions was also included at the end of the questionnaire, so that there is a qualitative analysis of the employees' perceptions on the subject, which allows access to new points of view and challenges taken-for-granted theories by exposing new theoretical reactions, thus adding a differential aspect to the research (Bansal, Smith, and Vaara 2018).

Based on the comprehensive examination of the existing literature and the research methodology used, the following research by hypothesis are derived:

H1: Time at the company by the employees has a positive impact in the perception regarding internal controls

H2: The role of being a control performer influences the perception of internal control in business operations.

H3: Age is positively correlated with the perception of internal control necessity in business operations

H4: The internal control being well integrated with the employee's daily activity is positively related to the overall perception of necessity of internal control in organizations

3.1. Data analysis

The quantitative data collected from the survey was analysed using the Jamovi program, which enabled a comprehensive review and statistical analysis to be conducted. Descriptive statistics were first used to summarize the main variables, followed by checks to ensure that the assumptions for regression analysis were met. An Ordinary Least Squares (OLS) regression was then conducted to evaluate the predictive power of the independent variables on the dependent variable, offering insights into the perception of necessity of internal control within the organization.

3.2. Quantitative approach

The quantitative approach was conducted based on a sample collected from a diverse group of a specific company employees across the various areas with the intent to analyse the collected data and create independent and dependent variables to assess statistically.

3.2.1. Survey design

The survey was made using Qualtrics, which is a web-based software that allows the user to create surveys and generate reports without having any previous programming knowledge. The target of said survey were the employees of across the various areas of a specific telecommunications company and it included well-structured questions to rate in a scale from 1 to 5, with 1 representing a frustration towards the question topic and 5 an empathy, varying from statements such as "Not Satisfied" and "Not Helpful" to "Very Satisfied" and "Very Helpful", amongst others. The first part of the survey intents to get to know the person anonymously, by assessing their demographic details, such as gender, age gap and nationality, followed by questions to assess the persons characteristics as an employee, such as how long

they have been in the company and if they are a control performer or not. Based on this last answer, the survey will filter the “no” answers and skip the chapter specific for those who indeed are control performers, where these are required to answer specific questions about the activities they perform and the alignment with the rest of the day-to-day activities. After, a chapter for risk assessment is also answered. The last chapter of the survey differs from the rest of it by providing sentences to the user and having them rate from 1 to 5 depending on how much they agree with it, followed by open ended question so there are less constraints to the user to express their opinions on the topic (see Appendix 1).

3.2.2. Population and sampling

The survey focuses solely on employees from a specific telecommunications company, across the various areas of the company, so the study is conducted based on a reliant population that are in the same environment. To guarantee different points of view the survey was sent and responded by several different positions in the company, from interns to managers.

3.2.3. Distribution

Given the specificity of the group marked as a target for the survey, it was highly complex to align with said company HR department the allowance to use the organizations collaborators data, even if completely anonymous and voluntary from their side, impeding gathering a high number of responses. As said by (Du et al. 2023), while it is better to have a sample as big as possible, sometimes gathering the data is not possible, so conducting a study with a small sample is also valid if noted the probability of statistical error in the results. This approach enabled the collection of responses from a sample size that was deemed sufficient, in accordance with the rule of 10 in regression. This rule stipulates that 10 events per variable (EPV) are required, despite the conflicting conclusions reached by (Van Smeden et al. 2016) presents an opposing viewpoint, arguing that the rule is overly restrictive, and that further research is needed to address the issue of sample size. Additionally, the diverse range of

responses allowed for in this study provides valuable insight into the varying perspectives on this topic.

3.3. Independent Variables

1) Age gap: The age gap between employees was selected as an independent variable for the purpose of evaluating the perception of internal controls within the company, given the potential impact of age-related factors on employees' attitudes and experiences with organisational policies. It has been demonstrated that employees belonging to different age groups frequently exhibit disparate perspectives, which are shaped by varying levels of experience, generational values, and familiarity with technological advancements. Such differences have the potential to influence how internal controls are understood, accepted, and implemented. For instance, younger employees may have had greater exposure to digital technologies during their formative years, which could lead them to view internal controls through the lens of efficiency and automation. Conversely, older employees, who have accrued more years of experience, may favour traditional or manual methods of control and may also exhibit a stronger attachment to established practices. By incorporating the age gap as an independent variable, this research aims to explore whether the perception of internal controls varies across age groups, thereby providing insights into whether generational differences contribute to differing attitudes towards internal control systems. It is of critical importance for organisations to understand these differences to design internal control systems that are both effective and broadly accepted by their diverse workforce.

2) Time at the company: The time spent at the company was selected as an independent variable for the purpose of assessing the perception of internal controls, given that the length of an employee's tenure within an organisation is likely to influence their familiarity with, and attitudes towards, internal control systems. It is reasonable to posit that employees who have

been with the company for a longer period may have a more in-depth understanding of its policies, procedures, and the historical context of its internal control mechanisms. Furthermore, they may have greater exposure to the way these controls have evolved over time, which could influence their perceptions of their necessity and effectiveness. Conversely, employees who are relatively new to the company may not yet have a comprehensive understanding of the significance of internal controls. Consequently, they may perceive them with a sense of novelty or even scepticism. It can be reasonably assumed that the level of comfort with and trust in the organisation's internal control systems will vary depending on the length of time an employee has been with the company. To this end, the duration of an employee's tenure is included as an independent variable. It is hypothesised that employees with a greater length of service may perceive the internal control system as more necessary or ingrained within the organisational culture, whereas those who have recently joined the company may adopt a more critical or neutral stance. Understanding this relationship is crucial for organisations to assess whether their internal control systems are perceived consistently across different levels of experience and to identify strategies for engaging employees with varying tenures.

3) **Control performer status:** The designation of the employee as a control performer was selected as an independent variable for the purpose of assessing the perception of internal controls. This is on the grounds that the role of employees in the execution of these controls is likely to shape their attitudes and understanding of their effectiveness and necessity. It can be reasonably assumed that employees who are directly involved in performing internal control activities will have a more hands-on perspective regarding the functionality and impact of these controls. Such perceptions may be shaped by the individual's direct experience of the control systems, encompassing both successes and challenges encountered, as well as an evaluation of the efficiency of the processes. Conversely, employees who are not involved in the performance of internal controls may adopt a more detached or generalised view. Such individuals may

perceive internal controls as abstract, potentially viewing them as onerous or superfluous unless they experience the direct consequences of non-compliance or gain a comprehensive understanding of their purpose. This distinction is significant because those who are actively engaged with controls may have a more nuanced appreciation for their value, whereas others may not fully grasp their importance unless the necessity for them becomes apparent in practice. It is hypothesised that employees who perform controls may view them as more critical to the organisation's functioning, while those who do not perform controls may have a more neutral or critical view. This differentiation is valuable for understanding how engagement with internal control systems affects perceptions and can inform strategies for improving employee understanding and buy-in across different roles within the organisation.

4) **Alignment with daily operations:** The perception of internal control alignment with daily operations was included as an independent variable for the purpose of assessing employees' views on the effectiveness and relevance of the internal control system within the company. This variable reflects the extent to which employees perceive the integration of internal control mechanisms into their day-to-day activities. It also considers whether employees view these mechanisms as separate from, or even obstructive to, their work. It can be reasonably assumed that internal controls which are aligned with the day-to-day activities of employees will be viewed more favourably. Such controls may enhance operational efficiency, streamline compliance and create a sense of coherence between tasks and organisational objectives. Conversely, if internal controls are perceived as misaligned - such as being overly bureaucratic, time-consuming, or unnecessary - they may be regarded as an impediment rather than a facilitator, potentially engendering resistance or negative attitudes among employees. The objective of including the perception of internal control alignment with daily operations as an independent variable is to ascertain whether employees view the internal control system as an integral and supportive component of their work or as an imposed requirement that

complicates their responsibilities. It is therefore crucial to understand that internal controls that are perceived to align well with daily operations are likely to gain stronger acceptance and compliance from employees, which will ultimately contribute to a more effective control environment within the company.

3.4. Dependent Variable

1) Necessity of internal control in the organization: This variable is pivotal in elucidating whether employees perceive the internal control system as a vital instrument for safeguarding the organisation's assets, ensuring compliance and maintaining operational efficiency, or if they regard it as a less critical, potentially bureaucratic element. By focusing on this variable, the research aims to determine the extent to which employees consider internal controls to be an indispensable aspect of organisational governance. The perceived necessity of these controls can provide insights into the effectiveness of the system, the extent to which employees are willing to engage and the extent of commitment to internal compliance and risk management within the company. An understanding of how employees assess the necessity of internal controls can reveal potential gaps in awareness or engagement with the system. This understanding can then be used to guide efforts to enhance the perception and effectiveness of internal control practices. The objective is to ascertain whether the control framework is perceived as a fundamental aspect of organisational stability and success, or as an area requiring enhanced communication and alignment with the daily roles of employees. This perspective is crucial, as a high perceived necessity of internal controls suggests strong organisational cohesion, whereas a low perceived necessity may indicate areas where alignment or understanding could be strengthened.

3.5. Research Model

The present study examines the perception of the necessity of internal control within a company, with a particular focus on four independent variables. The following variables were considered: age gap, time at the company, status of control performer (i.e., whether the individual is a control performer or not), and perceived alignment of internal control with daily activities. The dependent variable, namely the perception of the necessity of internal control, reflects the views of employees on the essential nature of internal controls within the organisation. To examine these relationships, an OLS regression analysis was conducted, for which all variables had to be coded in a compatible manner with the statistical model. In the case of age and time at the company, where the survey provided gap options, each variable was converted into a single dummy-coded value. This transformation permitted the capture of these variables as specific categories within the OLS model. Other variables, such as control performer status (yes/no) and perceived alignment with daily activities (on a scale of 1 to 5), were treated as categorical factors and numeric ratings, respectively. To further validate the OLS findings, an ANOVA test was performed to compare mean differences across groups, such as control performers versus non-performers, and the categorised age and tenure values. The ANOVA analysis corroborated the OLS results, elucidating discrepancies in the perception of internal control necessity across employee categories and corroborating the consistency of the OLS findings across distinct groups. The combination of OLS and ANOVA tests provides a comprehensive understanding of the influence of demographic factors, job roles, and perceptions of alignment on employees' views on the necessity of internal control. This multi-faceted approach enhances the robustness and reliability of the findings.

3.6. Open Questions

The Qualtrics survey, which was designed to analyse the quantitative aspects of the study, also included a qualitative responses section. Participants were asked four questions, with two being

mandatory for the survey to be closed and two optional. The questions asked were “What do you see as the main benefits of having an internal control system in a company?” and “In your opinion, what could be the risks of not having an internal control system in place?” as mandatory, “If you were responsible for designing the company’s internal control system, would you implement it differently? If so, how?” and “What would you recommend to ensure that internal controls remain effective and relevant in the company” as optional. This approach enabled the collection of data exclusively from a single source, while allowing respondents the option to decline participation in this final section. Consequently, the responses provided to the two optional questions are particularly insightful, given the voluntary nature of their submission.

4. Results

4.1. Quantitative Results

This section presents the descriptive statistics for the independent variables, namely age gap, time at the company, control performer status, and alignment with daily operations. Additionally, it presents the dependent variable, namely perception of the necessity of internal control. The presented descriptive statistics offer an overview of the distribution and central tendencies of the responses, thereby providing insights into the perceptions of internal control held by employees and the key factors influencing these perceptions. The following table summarizes the data for each variable.

Table 1. *Descriptive Statistics*

Variables	N	Mean	SD
1) Age Gap	55	2.56	0.714
2) Time at the Company	55	2.07	1.359
3) Control Performer Status	55	1.71	0.458
4) Alignment with Daily Operations	55	4.02	0.805
DV) Necessity of internal control in the organization	55	4.64	0.620
DV = Dependent Variable			

The following section presents the results of the statistical tests performed. Initially, the table displaying the obtained values from the OLS regression analysis is presented, demonstrating that the model accounts for 23.2% of the variance in the perception of the necessity of internal control and that it is statistically significant, with an F-statistic of 3.78 and a p-value <0.05 (p – *value* = 0.009). All the pre-requisites to ensure the validity of the results were ensured (see Appendix 2)

Table 2.*Model Fit Measures*

			Overall Model Test			
R	R^2	Adjusted R^2	F	df1	df2	p
0.482	0.232	0.171	3.78	4	50	0.009

The following table presents the coefficients derived from the OLS regression analysis, which demonstrate the impact of each independent variable on the perceived necessity of internal control within the company. The coefficients represent the estimated effect of each predictor on the dependent variable, thereby enabling an understanding of the relative influence and direction (positive or negative) of each factor in the model.

Table 3. *Model Coefficients*

Predictor	β	SE	t	p
Intercept	5.0813	0.6724	7.557	<.001
1) Age Gap	-0.6945	0.2103	-3.302	0.002
2) Time at the Company	0.3394	0.1102	3.078	0.003
3) Control Performer Status	0.2540	0.1809	1.404	0.167
4) Alignment with daily operations	0.0493	0.0982	0.502	0.618

As can be observed from the preceding table, the age gap variable is found to have a β of -.6945 with a p-value of 0.002, indicating a significant negative relationship with the perception of internal control necessity. This result does not support Hypothesis 3 (H3), which posited a positive association between age and perception. Instead, it suggests that as employees age, their perception of the necessity of internal control decreases. Conversely, the variable

indicating the length of time an employee has been with the company demonstrates a positive and statistically significant effect (β= 0.3394, p = 0.003), thereby supporting Hypothesis 1 (H1). This finding suggests that employees with longer tenure are more likely to view internal controls as necessary. The control performer status variable, with an estimate (β) of 0.2540 and a p-value of 0.167, does not have a statistically significant effect, thus failing to support Hypothesis 2 (H2), which suggested that being a control performer would influence the perception of internal control. Similarly, the variable measuring the Alignment with daily operations shows no significant effect on perception (estimate = 0.0493, p = 0.618), thereby leaving Hypothesis 4 (H4) unsupported, with the results indicating that the integration of internal controls into daily activities does not significantly influence employees' perceptions of the necessity of internal control. To provide additional insight, an ANOVA test was conducted to complement the findings from the OLS regression (see Appendix 3).

4.2. Open Questions Results

The open questions analysis was based on survey responses from a number of employees from a particular telecommunications company, drawn from a range of departments. Respondents were asked two mandatory questions and two optional questions, which enabled the researcher to gain insight into the differing perspectives held by individuals in different roles within the company and to identify areas of common ground. A comprehensive examination of the responses indicates the presence of a discernible consensus regarding the perceived benefits of implementing an internal control system within a company. While the specific terminology employed may vary, the primary theme consistently emphasises the enhanced risk management and operational efficiency that internal controls facilitate. A significant number of respondents indicated that internal controls instil a sense of security and confidence in their work within the company. Furthermore, additional responses indicated that a robust internal control system can facilitate compliance with regulatory standards and prevent cyber-attacks, thereby providing a

sense of safety and assurance within an organisation. In response to the question of the potential risks associated with the absence of an internal control system, the respondents offered similar concerns. The participants frequently mentioned a number of risks, including those related to people safety, the failure to mitigate certain risks, information leaks, fraud, financial losses and other related issues. One respondent offered a more complex perspective, stating “The extreme attention that would be required to compensate the lack of a control system, and the responsibility that would bring towards every employee”, suggesting that the absence of a control system will result in increased pressure on the employees, with internal acting almost as a “safety net” to the. The responses demonstrated the repercussions of unmitigated risks and the difficulties inherent in rectifying the absence of formalised controls. In response to the optional question regarding potential improvements to the company's internal control system, the responses varied. Some respondents indicated that the system is functioning effectively and would not require changes. However, other respondents provided constructive suggestions. One participant, an IT Fraud Analyst within the age gap of twenty to thirty-five years old (20 -35), put forth the proposition of consolidating all internal controls into a unified software or platform, which is not currently feasible but presents a valuable opportunity for improvement. Another participant, a Network Engineer aged between thirty-five and fifty years old (35 -50), emphasised the shortcomings of the current manual procedures, underscoring the necessity for automation to reduce the potential for human error and enhance efficiency. Furthermore, a Risk and Compliance Officer within the age gap of twenty to thirty-five years old (20 -35), proposed that internal controls should be concentrated primarily on financial operations, within the context of finance teams. This reflects the perception that control activities control activities performed by employees on a daily basis are viewed as tasks rather than as a form of control. In conclusion, respondents were invited to suggest methods for ensuring the continued effectiveness and relevance of internal controls. Although the number of responses was lower

than anticipated due to the optional nature of the question, several meaningful insights emerged. Some participants recommended the regular updating of processes in order to detect and address new threats, as well as the dissemination of information to users regarding new functionalities and the provision of periodic reminders. The most significant findings included the integration of controls into day-to-day tasks, ensuring that they are perceived as part of routine operations rather than checklist obligations, and emphasising knowledge sharing and the documentation of all processes. The initial responses pertained to H4, which, as evidenced by the quantitative study, did not exert a significant influence on the dependent variable (DV). A Chi-Squared test (see Appendix 4) demonstrated a statistically significant relationship between the integration of internal controls into daily operations and the perceived necessity of such controls within the organisation, although the relationship was not linear. It was also highlighted the necessity of ensuring that controls are not overly reliant on a single individual. This dependency was identified as a potential vulnerability, particularly in the event of the designated individual becoming unavailable. To address this issue, respondents emphasised the necessity for the sharing of knowledge across the entire team and the creation of documentation of control-related procedures. Such practices would guarantee the continuity and resilience of the control system, even in the event of a backup being required.

5. Discussion

A synthesis of the quantitative findings bears pivotal insights into employees' perceptions of internal controls, elucidating both concordance with and divergence from established theoretical frameworks. The results indicate a positive correlation between employee tenure and the perceived necessity of internal controls, thereby supporting hypothesis H1. This suggests that longer organisational experience enhances the appreciation of controls as tools for stability and risk management. Conversely, there is a negative correlation between age and this perception (which refutes H3), potentially reflecting concerns about inefficiency and over-

complexity in control systems, as observed in the literature. Similarly, the control performer status, which was intended to influence perceptions of internal controls, was not supported by the quantitative results (thus refuting H2). It may be the case that employees who view controls as an administrative burden rather than an integral part of their work lack the context necessary to see their strategic value. It is recommended that this discrepancy be addressed through more effective training and integration, which may lead to an improvement in the perceptions of control performers. The hypothesis that the integration of internal controls into daily activities significantly influences perceptions of their necessity was also not supported by the quantitative results (H4). However, the open questions responses emphasise the importance of unified integration, with employees indicating that controls should be embedded in daily operations so that they are not perceived as merely complying with regulations. This is supported by a Chi-Squared test (see Appendix 4) which highlights the non-linear relationship between the variables, thereby supporting H4.

Open questions responses also corroborate the notion that the implementation of internal controls enhances workplace safety, compliance and risk mitigation. This is consistent with the hypothesis that the integration of controls into routine decision-making processes optimises resource management and operational efficiency. Nevertheless, some employees perceive controls as mere administrative tasks, rather than strategic instruments, thereby indicating a discrepancy between the theoretical advantages and the practical implementation. It is imperative to bridge this gap through the implementation of more effective communication strategies that elucidate the strategic value of controls and their integration with day-to-day tasks, as emphasised by the COSO framework (Tadesse, Rosa, and Parker 2022), which recommends integrating controls with organisational objectives. However, employee feedback indicates inefficiencies, including the use of manual processes and a lack of centralised systems. The automation and streamlining of controls may prove an effective solution to these issues,

reducing redundancies and errors while improving alignment with strategic objectives, just like observed in the power trading institutions case study by (Lyu et al. 2023). Furthermore, the importance of knowledge sharing was highlighted, with recommendations for collaborative management and comprehensive documentation to prevent overreliance on individual performers and enhance system resilience and continuity. Although most employees hold a favourable view of internal controls, a minority perceive them as excessive or misaligned with operational priorities. This finding aligns with the literature, which suggests that such perceptions can impede efficiency. This is particularly pertinent in the context of SOX 404, where the financial burden of compliance may not necessarily result in superior outcomes (Bajra et al. 2023) . The experience of Company Y, which shifted its internal controls from a regulatory focus to a tool for operational efficiency, suggests that reframing controls as strategic assets could improve employee perceptions and engagement (Puspasari and Yuwono 2013).

In conclusion, respondents highlighted the necessity for the regular updating of controls in order to address emerging risks. They recommended that such updates should be conducted on a regular basis and that the benefits of controls should be communicated more effectively. These findings are consistent with process mapping approaches that emphasise control points as a means of improving quality, risk management and relevance, thereby ensuring that controls remain effective in dynamic environments (Imran and Soomro 2022).

6. Conclusion

This study provides valuable insights into employees' perceptions of internal controls and fills a significant gap in the existing literature. A key finding was the widespread misconception that internal controls are primarily related to financial reporting, overshadowing their broader role in operational efficiency and risk management. This highlights the need for organisations to better communicate the strategic importance of internal controls across different areas of the

business. Unlike previous studies that have focused on assessing the effectiveness of control systems, this research uniquely analysed the perceptions of employees, providing practical insights that are particularly useful to the business. The results identified areas for improvement, such as better integration of controls into daily tasks and better communication of their purpose. One of the most curious findings was the refutation of Hypothesis 4 (H4) in the quantitative analysis, which suggested that the integration of internal controls into daily activities did not significantly affect perceptions. However, the open questions responses partially confirmed the importance of this integration, highlighting the value of a qualitative analysis approach for a more comprehensive understanding. This study lays the groundwork for future research on internal control perceptions and provides actionable recommendations for improving the effectiveness and engagement of control systems within organisations.

7. Limitations

This study has several limitations that should be considered when interpreting the results. First, the sample is predominantly Portuguese (96.4%), with the remainder being Brazilian, which limits the generalisability of the findings to broader or more diverse cultural contexts. In addition, the sample size of 55 participants, while sufficient for preliminary analysis, may limit the robustness of the conclusions and the ability to detect more nuanced relationships. The survey distribution process was also constrained by HR policies, which may have influenced the reach and representativeness of the sample. These factors highlight areas for improvement in future research to increase the reliability and applicability of the findings.

8. Future Research and Practical Implications

The findings of this study will feed directly into improvements in my day-to-day work and the whole company's operation, focusing on enhancing the relevance and effectiveness of internal controls. Key actions will include the implementation of awareness campaigns to emphasise

that controls are critical safeguards and not just checklist items, particularly for those performing the controls. Efforts will also be made to automate processes where feasible to reduce human error and improve efficiency. Where automation isn't immediately possible, the need for it will be communicated to stakeholders. In addition, controls will be better integrated into day-to-day operations to ensure that they are seen as essential components of risk management rather than burdensome tasks. These initiatives will not only strengthen the organisation's internal control system, but also provide a foundation for future research to optimise and sustain effective control practices. Future research on internal control could benefit from a larger sample size to ensure broader and more representative insights. Including a greater diversity of nationalities would provide a deeper understanding of cultural and operational influences. Comparing findings with other companies, particularly within the same sector, could highlight industry trends and best practice. In addition, interviewing employees from a broader range of different departments would provide a wider picture of internal control implementation and challenges.

References

Abernethy, Margaret A., Wei Li, Yunyan Zhang, and Hanzhong Shi. 2023. “Firm Culture and Internal Control System.” *Accounting and Finance* 63 (3): 3095–3123. https://doi.org/10.1111/acfi.13020.

Bajra, Ujkan Q., Florin Aliu, Armand Krasniqi, and Ejup Fejza. 2023. “The Impact of the Sarbanes–Oxley Act on the Integrity of Financial Reporting: Was It Meritorious?” *Journal of Corporate Accounting and Finance* 34 (3): 184–96. https://doi.org/10.1002/jcaf.22619.

Bansal, Pratima Tima, Wendy K. Smith, and Eero Vaara. 2018. “From the Editors New Ways of Seeing through Qualitative Research.” *Academy of Management Journal*. Academy of Management. https://doi.org/10.5465/amj.2018.4004.

Chen, Hanwen, Ting Li, and Chuancai Zhang. 2021. “Going Too Far Is as Bad as Not Going Far Enough: An Inverted u-Shaped Relationship between Internal Controls and Operational Efficiency.” *Journal of International Accounting Research* 20 (2): 25–50. https://doi.org/10.2308/JIAR-17-571.

Chen, Ting, Xiaotao Kelvin Liu, Chi Wan, and Yakun Wang. 2024. “Customer Satisfaction and Internal Control.” *Journal of Management Accounting Research* 36 (1): 27–53. https://doi.org/10.2308/JMAR-2022-073.

Cheng, Qiang, Beng Wee Goh, and Jae B. Kim. 2018. “Internal Control and Operational Efficiency.” *Contemporary Accounting Research* 35 (2): 1102–39. https://doi.org/10.1111/1911-3846.12409.

Chesley, Dennis, Ryan Waguespack, and Erica Mehm. 2024. “Internal Control & Enterprise Risk Management: The Benefits of Integrating with Strategy and Performance Internal

Control & Enterprise Risk Management The Benefits of Integrating with Strategy and Performance."

Du, Heng, Zhiwei Lian, Li Lan, and Dayi Lai. 2023. "Application of Statistical Analysis of Sample Size: How Many Occupant Responses Are Required for an Indoor Environmental Quality (IEQ) Field Study." *Building Simulation* 16 (4): 577–88. https://doi.org/10.1007/s12273-022-0970-4.

Frazer, Linval. 2016. "Internal Control: Is It a Benefit or Fad to Small Companies? A Literature Dependency Perspective."

Imdieke, Andrew J., Chan Li, and Shan Zhou. 2023. "Does the Presence of an Internal Control Audit Affect Firm Operational Efficiency?*." *Contemporary Accounting Research* 40 (2): 952–80. https://doi.org/10.1111/1911-3846.12839.

Imran, Rafia, and Tariq Rahim Soomro. 2022. "Mapping of Agile Processes into Project Management Knowledge Areas and Processes." In *2022 International Conference on Business Analytics for Technology and Security, ICBATS 2022*. Institute of Electrical and Electronics Engineers Inc. https://doi.org/10.1109/ICBATS54253.2022.9759013.

Lyu, Jingwei, Yugui Gu, Mingzhu Yuan, Shuhong Shi, Xian Zhao, and Wei Wang. 2023. "Construction and Application of Internal Control Compliance Risk Monitoring System for Power Trading Institutions." In *Proceedings - 2023 8th Asia Conference on Power and Electrical Engineering, ACPEE 2023*, 1086–90. Institute of Electrical and Electronics Engineers Inc. https://doi.org/10.1109/ACPEE56931.2023.10135143.

Puspasari, Dewi, and Budi Yuwono. 2013. *2013 International Conference on Advanced Computer Science and Information Systems (ICACSIS) : Sanur Paradise Plaza Hotel, Bali, September 28th-29th, 2013*. Faculty of Computer Science, Universitas Indonesia.

Shin, Hyejeong, and Sorah Park. 2020. “The Internal Control Manager and Operational Efficiency: Evidence from Korea.” *Managerial Auditing Journal* 35 (7): 979–1006. https://doi.org/10.1108/MAJ-04-2019-2253.

Smeden, Maarten Van, Joris A.H. De Groot, Karel G.M. Moons, Gary S. Collins, Douglas G. Altman, Marinus J.C. Eijkemans, and Johannes B. Reitsma. 2016. “No Rationale for 1 Variable per 10 Events Criterion for Binary Logistic Regression Analysis.” *BMC Medical Research Methodology* 16 (1): 1–12. https://doi.org/10.1186/s12874-016-0267-3.

Süreçlerin, Belediyelerde, Yeniden Tasarlanması, : Süreç, Mimarisi Geliştirme, Süreç Haritalama, Üzerine Bir, Örnek Olay, Çalışması Şevkinaz Gümüşoğlu, Güzin Özdağoğlu, and Işıl Kellevezir. 2017. “Cilt 17 · Sayı 2 · Nisan.” https://doi.org/10.21121/eab.2017225201.

Tadesse, Amanuel F., Regina C. Rosa, and Robert J. Parker. 2022. “The Adoption and Consequences of COSO 2013.” *Accounting Horizons* 36 (4): 241–60. https://doi.org/10.2308/horizons-18-123.

Vaccari, Mentore, Waleed Montasser, Terry Tudor, and Luigi Leone. 2017. “Environmental Audits and Process Flow Mapping to Assess Management of Solid Waste and Wastewater from a Healthcare Facility: An Italian Case Study.” *Environmental Monitoring and Assessment* 189 (5). https://doi.org/10.1007/s10661-017-5940-4.

Appendices

Appendix 1: Qualtrics Survey

Your perception on the company's Internal Control

Start of Block: Intro

INFORMED CONSENT

Please read the following carefully.

This survey is being conducted as part of my master's thesis in the field of management at Nova School of Business and Economics. This study revolves around the perception of an organization's stakeholders regarding its internal control. Researcher: Francisco Pedro, master's in management student at Nova SBE and Professor Filipa Breia Fonseca.

Nova SBE Purpose: This study aims to gather answers to assess the perception of specific company employees regarding the internal control system in place. Duration: The study should take you approximately 10 minutes to complete. Voluntary participation and anonymity: Your answers are completely anonymous and the researchers responsible for this study will use them exclusively for research purposes. Results may include summary data, but you will never be identified. Your identity is not associated with your answers at any point in time. Your participation in this research is completely voluntary.

With the best regards,

Francisco Pedro

Q00 Do you consent to participate in the survey?

- ○ Yes (1)
- ○ No (2)

Skip To: End of Survey If Do you consent to participate in the survey? = No

End of Block: Intro

Start of Block: Let's Get Started

Q0 What is your position within the company?

_____

Q1 What is your nationality?

_____

Q2 What is your gender?

- ○ Male (1)
- ○ Female (2)
- ○ Prefer not to say (3)

Q3 What is your age group?

- ○ <20 (1)
- ○ 20-35 (2)
- ○ 35-50 (3)
- ○ >50 (4)

Q4 How long have you been in the company?

- ○ <5 years (1)
- ○ 5 - 10 years (2)
- ○ 10 - 20 years (3)
- ○ >20 years (4)

Q5 Are you a control owner/performer?

- ○ No (1)
- ○ Yes (2)

Display This Question:

If are you a control owner/performer? = Yes

Q6 Have you ever answered to a CSA (control self-assessment)?

- ○ No (1)
- ○ Yes (2)

Display This Question:

If are you a control owner/performer? = Yes

Q7 Have you ever been subject to an Internal Control Monitoring activity?

- ○ No (1)
- ○ Yes (2)

Display This Question:

If have you ever been subject to an Internal Control Monitoring activity? = Yes

Q8 What results did you have from past tests?

- ○ Ineffective (1)
- ○ Effective (2)
- ○ Both (3)

End of Block: Let's Get Started

Start of Block: General Perception of Internal Controls

Q9 How would you describe your understanding of the internal control processes in place?

- ○ Very clear (1)
- ○ Somewhat clear (2)
- ○ Neutral (3)
- ○ Somewhat unclear (4)
- ○ Very unclear (5)

Q10 How confident are you in the effectiveness of the current internal control system in preventing errors or fraud?

- ○ Very confident (1)
- ○ Somewhat confident (2)
- ○ Neutral (3)
- ○ Not very confident (4)
- ○ Not confident at all (5)

Q11 To what extent do you feel that the internal controls are well-aligned with the company's goals and objectives?

- ○ Strongly aligned (1)
- ○ Moderately aligned (2)
- ○ Neutral (3)
- ○ Slightly misaligned (4)
- ○ Strongly misaligned (5)

Q12 To what extent do you think the internal control system helps achieve the company's goals and objectives?

- ○ Strongly contributes (1)
- ○ Somewhat contributes (2)
- ○ Neutral (3)
- ○ Little contribution (4)
- ○ No contribution at all (5)

Q13 How confident are you in the company's internal control system to detect problems before they become serious?

- ○ Very confident (1)
- ○ Somewhat confident (2)
- ○ Neutral (3)
- ○ Not very confident (4)
- ○ Not confident at all (5)

Q14 How confident are you that the internal control system is well integrated into daily operations?

- ○ Very confident (1)
- ○ Somewhat confident (2)
- ○ Neutral (3)
- ○ Not very confident (4)
- ○ Not confident at all (5)

End of Block: General Perception of Internal Controls

Start of Block: Roles and Responsibilities in Control Execution

Display This Question:

If are you a control owner/performer? = Yes

Q15 How clearly are your roles and responsibilities defined within the internal control process?

- ○ Very clear (1)
- ○ Somewhat clear (2)
- ○ Neutral (3)
- ○ Somewhat unclear (4)
- ○ Very unclear (5)

Display This Question:

If are you a control owner/performer? = Yes

Q16 How well-equipped do you feel to perform your role within the internal control system?

- ○ Very well-equipped (1)
- ○ Moderately well-equipped (2)
- ○ Neutral (3)
- ○ Poorly equipped (4)
- ○ Very poorly equipped (5)

Display This Question:

If are you a control owner/performer? = Yes

Q17 How sufficient is the training or support you receive to perform your internal control responsibilities?

- ○ Very sufficient (1)
- ○ Somewhat sufficient (2)
- ○ Neutral (3)
- ○ Insufficient (4)
- ○ Very insufficient (5)

Display This Question:

If are you a control owner/performer? = Yes

Q18 To what extent are your internal control tasks aligned with your skills and job position?

- ○ Perfectly aligned (1)
- ○ Mostly aligned (2)
- ○ Neutral (3)
- ○ Poorly aligned (4)
- ○ Not aligned at all (5)

Display This Question:

If are you a control owner/performer? = Yes

Q19 How often do you think internal controls unnecessarily complicate day-to-day operations?

- ○ Very often (1)
- ○ Often (2)
- ○ Neutral (3)
- ○ Not so often (4)
- ○ Not often (5)

End of Block: Roles and Responsibilities in Control Execution

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Start of Block: Risk Management and Compliance

Q20 How significantly do internal controls in the company contribute to risk reduction and compliance?

- ○ Very significantly (2)
- ○ Significantly (4)
- ○ Neutral (5)
- ○ Insignificantly (6)
- ○ Very insignificantly (7)

Q21 How does the internal control system allow for the early detection of potential issues or risks?

- ○ Very significantly (1)
- ○ Significantly (2)
- ○ Neutral (3)
- ○ Insignificantly (4)
- ○ Very insignificantly (5)

End of Block: Risk Management and Compliance

Start of Block: To Conclude

Q22 Rate the following statements from 1 to 5, based on how you feel about them

	1- Strongly Disagree (1)	2 - Disagree (2)	3 - Neutral (3)	4 - Agree (4)	5 - Strongly Agree (5)
Internal controls are viewed as a valuable part of the company's overall performance. (1)	○	○	○	○	○
Internal Control is necessary within the organization. (2)	○	○	○	○	○
The company could operate efficiently without an Internal Control system. (3)	○	○	○	○	○

Q23 What do you see as the main benefits of having an internal control system in a company?

_____

Display This Question:

If Rate the following statements from 1 to 5, based on how you feel about them = The company could operate efficiently without an Internal Control system. [1- Strongly Disagree]

Or rate the following statements from 1 to 5, based on how you feel about them = The company could operate efficiently without an Internal Control system. [2 - Disagree]

Or rate the following statements from 1 to 5, based on how you feel about them = The company could operate efficiently without an Internal Control system. [3 - Neutral]

Q24 In your opinion, what could be the risks of not having an internal control system in place?

_____

Q25 If you were responsible for designing the company's internal control system, would you implement it differently? If so, how? (Answer is not mandatory)

_____

Q26 What would you recommend to ensure that internal controls remain effective and relevant in the company? (Answer is not mandatory)

_____

End of Block: To Conclude

Appendix 2: OLS regression pre-requisites

1) Q-Q Plot of Residuals

A quantile-quantile (Q-Q) plot was employed to assess the normality of the residuals in the OLS regression model. The plot demonstrates that residuals situated in proximity to the centre exhibit a high degree of alignment with the diagonal line, thereby indicating a tendency towards normality around the mean. However, departures from normality are evident in the tails. Specifically, smaller-than-expected values are present in the left tail, while larger-than-expected values appear in the right tail. These deviations indicate the presence of mild non-normality, which may be attributed to the influence of outliers or skewness. While this may have a slight impact on inferential tests, the Central Limit Theorem ensures the reliability of coefficient estimates for large sample sizes. In the case of smaller samples, further diagnostic procedures or data transformations could be considered as a means of addressing these issues. In general, the residuals can be considered to be approximately normal for practical purposes.

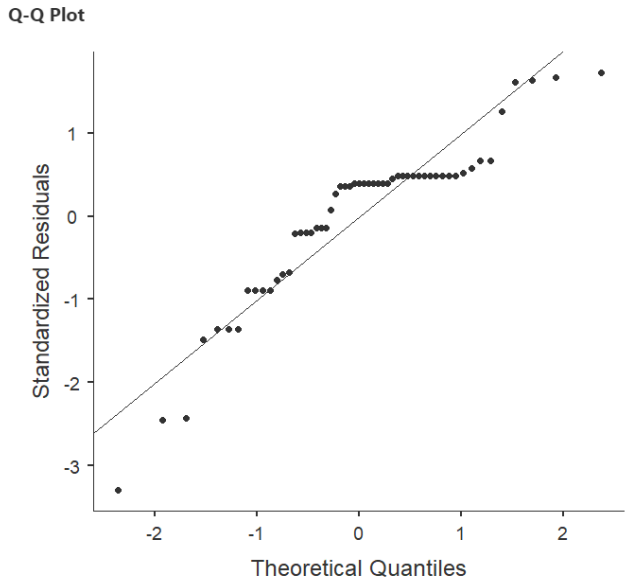

Figure 1. *Q-Q Plot of Residuals*

2) Cook's Distance Test

As indicated by the Q-Q plot, there were previously identified mild deviations from normality in the residuals, particularly in the tails. Nevertheless, the results of the Cook's distance test demonstrate that no extreme outliers or high-leverage points are responsible for distorting the model, given the maximum Cook's distance of 0.231 being below of the conventional threshold of 1, suggesting that no single observation exerts a disproportionate influence on the regression model, also supported by the SD of 0.0461, indicating that most values are small and concentrated near the lower end of the range. This lends support to the assumption that the observed non-normality in the Q-Q plot is not attributable to the influence of particular data points but is more likely to be a consequence of the overall structure of the data set.

Table 4. *Cook's Distance*

			Range	
Mean	Median	SD	Min	Max
0.0243	0.00232	0.0461	2.66e-4	0.231

3) Normality Test

Despite the failure of the normality tests (p-value < 0.05), the study will proceed based on the results obtained from the Q-Q plot, which indicates that the data approximates a normal distribution. Furthermore, the Cook's distance test did not identify any influential outliers that could potentially bias the results. Given the sample size (n=55), the Central Limit Theorem also supports the validity of parametric methods, as it ensures that the sampling distribution of the mean will be approximately normal regardless of the original data distribution. Considering the aforementioned evidence, we are confident in proceeding with the study using parametric tests. Moreover, normality tests such as the Shapiro-Wilk test are highly sensitive, particularly in larger samples, and may detect minor deviations from normality that are not practically

significant. As the other diagnostic measures do not indicate any cause for concern, we are confident in proceeding with the study using parametric tests.

Table 5. *Normality Tests*

	Statistics	p
Shapiro-Wilk	0.884	<0.001
Kolmogorov-Smirnov	0.221	0.009
Anderson-Darling	2.65	<.001

4) Collinearity Test

The Variance Inflation Factor (VIF) and Tolerance values offer insight into the potential for multicollinearity between the independent variables in the model. A VIF exceeding 10 or a tolerance value below 0.1 typically signifies problematic collinearity. However, all values in this instance fall within acceptable ranges. In particular, the variables "Age Gap" and "Time at the Company" have VIFs of 3.83 and 3.81, respectively, which are well below the threshold, indicating that there are no significant multicollinearity concerns. The variables "Control Performer Status" and "Control Integrated into Daily Operations" exhibit even lower VIFs (1.17 and 1.06) and higher tolerance values (0.857 and 0.943), indicating that these variables are not highly correlated with the others. In conclusion, the results indicate that multicollinearity is not a significant concern in the current model, and that the independent variables are not excessively influencing each other.

Table 6. *Collinearity Statistics*

	VIF	Tolerance
Age Gap	3.83	0.261
Time at the Company	3.81	0.263
Control Performer Status	1.17	0.857
Alignment with Daily Operations	1.06	0.943

5) Autocorrelation Test

The results of the Durbin-Watson test indicate that the residuals of the regression model do not exhibit significant autocorrelation. The Durbin-Watson statistic is 2.25, which is in close proximity to the value of 2, indicating that there is no considerable correlation between the residuals. Furthermore, the p-value of 0.356 exceeds the conventional significance threshold of 0.05, providing additional support for the absence of autocorrelation. These findings indicate that the assumption of independent errors is valid in the regression model and that autocorrelation does not represent a significant issue in the analysis.

Table 7. *Durbin-Watson Test for Autocorrelation*

Autocorrelation	DW Statistic	p
-0.132	2.25	0.356

6) Heteroskedasticity Tests

The results of the heteroskedasticity tests indicate that there is no compelling evidence of heteroskedasticity in the regression model. The Breusch-Pagan test yielded a statistic of 7.24 with a p-value of 0.124, which exceeds the 0.05 significance threshold. Therefore, the null hypothesis of homoskedasticity is not rejected, indicating that the variance of the residuals is likely constant. The Goldfeld-Quandt test yielded a statistic of 1.97 with a p-value of 0.059, which is in close proximity to the threshold of 0.05. This indicates weak evidence against the null hypothesis of homoskedasticity. Finally, the Harrison-McCabe test yielded a statistic of 0.357 with a p-value of 0.063, which is also above the 0.05 threshold. This further suggests that heteroskedasticity is not a significant concern. In conclusion, the results of all three tests indicate the absence of heteroskedasticity in the model.

Table 8. *Heteroskedasticity test*

	Statistics	p
Breusch-Pagan	7.24	0.124
Goldfeld-Quandt	1.97	0.059
Harrison-McCabe	0.357	0.063

Appendix 3: ANOVA

The results of the ANOVA analysis serve to corroborate the findings of the OLS regression. The Age Gap variable (F = 10.903, p = 0.002) and Time at the Company (F = 9.476, p = 0.003) both demonstrate significant differences in the perception of internal control necessity, which align with the significant coefficients identified in the OLS analysis. These results indicate that age and time at the company exert a significant influence on perceptions, a finding that is consistent across both tests. Meanwhile, the variables of Control Performer Status (p = 0.167) and Control Integration into Daily Operations (p = 0.618) do not demonstrate significant differences, thereby reinforcing the OLS findings that these variables exert a negligible influence on employees' perceptions of internal control necessity.

Table 9. *Omnibus ANOVA test*

	Sum of Squares	df	Mean Square	F	p
1) Age Gap	3.4696	1	3.4696	10.903	0.002
2) Time at the Company	3.0154	1	3.0154	9.476	0.003
3) Control Performer Status	0.6272	1	0.6272	1.971	0.167
4) Alignment with Daily Operations	0.0802	1	0.0802	0.252	0.618
Residuals	15.9113	50	0.3182		

Appendix 4: Chi-square test

A Chi-square test was conducted to analyse the relationship between the variables "necessity of internal control" and "internal control aligned into daily operations", to provide reasoning for the qualitative results verified. The calculated value of the test statistic, X^2, is 18.6, with a p-value of 0.005. Given that the p-value is less than the conventional threshold of 0.05, the null hypothesis, which assumes no association between these variables, is rejected. With a sample size of 55, the results indicate a statistically significant relationship between the perception of the necessity of internal control and its alignment with daily operations. This finding suggests that employees who perceive internal control as necessary are more likely to consider it integrated into their day-to-day activities, or vice versa.

Table 10. *Contingency table*

	Necessity of Internal Controls in the Organization			
Control integrated into daily operation	3- Neutral	4 -Agree	5 – Strongly Agree	Total
Neutral	3	1	4	8
Not very confident	0	0	3	3
Somewhat	0	10	19	29
Very confident	1	1	13	15
Total	4	12	39	55

Table 11. *X^2 Tests*

	Value	df	p
X^2	18.6	6	0.005
N	55		