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Identification and Prioritization of Factors Affecting the Quality of Internal Controls

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Abstract

The aim of this research is to identify and prioritize factors affecting the quality of internal controls. To achieve this objective, a set of indicators and components related to the quality of internal controls were identified through a review of theoretical foundations and previous studies, as well as interviews with experts and professionals in the field. A qualitative research approach using a multiple-grounded theory method was applied. Therefore, data analysis was conducted at both the empirical and theoretical levels. The required empirical data was obtained through theoretical sampling of 15 semi-structured interviews with professionals who had successful experience in implementing the mentioned system during the years 2019 and 2023. The theoretical data was obtained through a literature review. The results of the qualitative research revealed several conditions and factors that influence the quality of internal controls. Causal conditions include the structure of the board, characteristics of internal auditors, and board committees. Core conditions refer to environmental factors and performance factors. Strategies, such as proper documentation of procedures, external auditing, and organizational components, emerged as key actions and interactions in improving internal control quality. Contextual factors include ownership structure, company structure, and managerial decisions. Intervening factors were identified as economic, political, regulatory, and market factors, as well as the role of legislators. The outcomes of the study highlight the impact of internal controls on asset protection, the efficiency of internal controls in reducing risks and penalties, the effect of internal controls on organizational productivity, customer satisfaction, and the overall quality of both financial and non-financial information.

Keywords: *Quality, internal controls, board structure, proper documentation of procedures.*

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1. Introduction

The quality of internal controls refers to a set of policies and procedures designed and implemented to ensure the accuracy and integrity of financial operations, safeguard organizational resources, ensure compliance with laws and regulations, and identify and mitigate potential risks [1-3]. These controls are generally divided into two main categories: preventive controls and detective controls. Preventive controls are designed to prevent errors or fraud, while detective controls focus on identifying problems after they have occurred [4]. One of the key components of internal control quality is the clear definition of roles and responsibilities [3]. Every member of the organization should understand their duties in various processes and what responsibilities they hold. This clarity in task distribution helps prevent mistakes and fraud and also facilitates the oversight processes. Additionally, segregation of duties is a critical principle in the design of internal controls, aimed at preventing the concentration of power in one individual and reducing the risk of abuse. For instance, the person responsible for recording financial information should not be the same person who verifies the accuracy of that information [5, 6].

Internal controls also focus on continuous monitoring and evaluation of the performance of systems and processes. This ongoing monitoring includes reviewing financial

reports, assessing employee performance, and regularly reviewing information to quickly identify and address any issues. Accounting systems and management software serve as essential tools in this regard. These systems must be effectively protected against unauthorized access and provide reliable and trustworthy information [7]. Another important component of internal control quality is organizational culture. An organizational culture that emphasizes professional ethics and integrity can significantly contribute to preventing fraud and corruption. Moreover, employees should be aware of the importance of internal controls and receive the necessary training to effectively participate in their proper implementation [1]. Finally, to ensure the effective functioning of internal controls, periodic evaluations of the internal control systems should be conducted to identify and correct weaknesses. These evaluations may include internal and external audits, risk management reviews, and document revisions. The ultimate goal of these actions is to minimize risks and damages while improving efficiency and transparency in organizational processes.

The increasing complexity and expansion of activities, intensified competition, rapid changes in the economic environment, continuous advancements in information technology, as well as the rapid growth of economic units, increasing transaction volumes, and ongoing technological progress have led management's attention to numerous issues, making direct and individual control of economic units increasingly difficult. In this context, the survival and continuity of any economic unit depend on the optimal and effective use of resources under its control (both financial and non-financial). Oversight and monitoring in this area require appropriate supervisory and control mechanisms. Therefore, the need for the establishment of effective internal control systems as an integral part of corporate governance systems has received significant attention. Based on global auditing standards (Standard No. 400), internal control refers to all policies and procedures approved by an organization’s management that play a vital role in achieving primary objectives, such as conducting business in the best possible way, ensuring compliance with management policies, safeguarding assets, preventing and detecting fraud, and ensuring timely and reliable financial reporting. Consequently, internal controls are designed and implemented to identify business risks that threaten the achievement of these objectives [8]. Effective internal controls are one of the fundamental principles in ensuring the security and health of an organization, leading to increased efforts and attention to monitoring and improving financial and organizational health metrics [9]. In contrast, weak internal controls provide opportunities for fraudulent individuals to commit crimes and engage in deceitful activities [10-12].

Jafari et al. (2022) conducted a study examining the moderating role of managers' narcissism in explaining the relationship between auditor characteristics and internal control effectiveness. For this purpose, data from 144 companies spanning the years 2012 to 2019 were utilized. The study was applied in terms of its objective, descriptive-analytical in terms of the inferential method, and retrospective in terms of the overall research design. Professional competence, experience, and education level of internal auditors were the auditor characteristics investigated in this study. After ensuring the acceptable fit of the measurement and structural models, the results obtained from hypothesis testing using panel data regression with random effects indicated that managerial narcissism negatively moderates the relationship between auditor characteristics and internal control effectiveness. In other words, the more narcissistic the managers are, the less the positive impact of the professional competence, experience, and education level of auditors on the effectiveness of internal controls [13]. Jasemi (2020) conducted a study examining the effect of auditing characteristics on the effectiveness of internal control in companies. To prepare the data for analysis, the researcher used Excel and Eviews9 software. The study period was from 2013 to 2018. The results revealed that auditing characteristics significantly impact the effectiveness of internal controls in companies, playing a key and important role [10]. Khormabadi et al. (2020) modeled the indices for evaluating the effectiveness of internal controls in companies listed on the Tehran Stock Exchange using a structural-interpretive approach. The data for the study were collected using a mixed exploratory method [9]. Ji et al. (2019) demonstrated in their research that if internal controls are derived from the company’s overall policies or if multiple agency problems exist, internal controls are not very effective [14]. Overall, the results indicate that the effectiveness of internal controls depends on various internal organizational factors. Oussi et al. (2018) found that the quality of internal controls positively and significantly influences the performance competence of internal auditors, the level of trust in internal audits, and the extent of the audit committee’s involvement in evaluating the company’s financial activities [15]. Zhou et al. (2016) examined the relationship between internal controls and the

corporate life cycle in their study. The results indicated a significant impact of internal controls on improving company performance, with the effect varying at each stage of the corporate life cycle [5].

Weak internal controls create opportunities for fraudulent individuals to engage in criminal activities and deceitful practices. When internal controls are not effectively designed or implemented, there is a higher risk of errors, fraud, and mismanagement within an organization. These vulnerabilities can lead to financial losses, reputational damage, and legal consequences. Therefore, ensuring the robustness of internal controls is critical to maintaining the integrity of the organization's operations and safeguarding its assets. Moreover, the failure to establish comprehensive and effective internal control systems can undermine the organization's ability to achieve its strategic goals, comply with regulatory requirements, and protect stakeholder interests. In today's dynamic and complex business environment, the continuous monitoring and updating of internal control systems are crucial. Organizations must adapt to changing regulations, market conditions, and technological advancements, which necessitate regular revisions to control mechanisms to ensure they remain effective. In summary, the effective design, implementation, and continuous evaluation of internal controls are fundamental to the long-term success of an organization. They contribute to maintaining financial integrity, minimizing risks, ensuring compliance, and fostering a culture of accountability and transparency. Therefore, management must prioritize the establishment of a robust internal control system and continuously monitor its performance to ensure its effectiveness in achieving organizational goals and mitigating potential risks.

2. Methodology

The approach of the present research is qualitative, aiming to identify and present a model of factors influencing the quality of the internal control system using theory grounded in multiple data sources. Grounded theory was first introduced by Strauss and Glaser in 1967 and presented an inductive approach that immersed the researcher in a field of scattered empirical data, typically obtained from interviews. The researcher then proceeded to label the data, categorize recurring data, and arrange concepts, ultimately generating a theory. Goldkuhl and Cronholm (2010) introduced a qualitative research method based on grounded theory, termed "multiple grounded theory," which aimed to improve and develop the original grounded theory approach. According to this theory, a theory can be founded with the participation of data obtained from the literature review. Multiple grounded theory can be considered an advanced version of grounded theory, which not only relies on induction but also adds a theoretical foundation to empirical data. Multiple grounded theory seeks to combine both inductive and deductive reasoning in the process of theorizing, offering a more comprehensive approach than the original version.

The reason for choosing multiple grounded theory over the initial approach in this research is the use of both related literature and theoretical data (theoretical grounded data) alongside empirical data (empirical grounded data). In other words, since grounded theory means "providing reasons or justifications" for certain phenomena, it is necessary not only to provide empirical data for theory generation but also to rely on other sources of knowledge for justification. Pre-existing theories may influence the development of a new theory. Multiple grounded theory, by incorporating theoretical grounded data and a deductive approach, allows the researcher to justify how larger structural phenomena shape the data itself (Malagan & Wells, 2009). Research in the area of internal control systems can provide evidence that enriches the theory.

In this research, to obtain empirical grounded data, interviews were used as the data collection tool, and the participants were individuals with successful experiences in implementing internal control systems. For theoretical grounded data, literature was reviewed to develop the theory.

As shown above, the general stages of this research are as follows:

1. **Stage 1**: Interviewing individuals with successful experiences in implementing internal control systems and reviewing the literature: data generation.
2. **Stage 2**: Analyzing the data obtained from Stage 1.
3. **Stage 3**: Inductive coding, including: first-level coding: generating concepts, and second-level coding: generating categories. In this stage, recurring data are labeled.
4. **Stage 4**: Pattern coding: in this stage, the categories are classified, and logical relationships between the categories are explained. Conditions for the context (both internal and external), actions, and results are identified.
5. **Stage 5**: Selective coding: final theory generation. The impact of each category on the occurrence of

the core category is narrated, reviewed, refined, and completed. The factors influencing the quality of the internal control system are identified.

Finally, a validation process is carried out, and the final theory and its concepts and categories are compared with the research literature. MAXQDA software, version 10, was used for data analysis. The research period spans the years 2019 to 2023, and the selection of participants was theoretical. In this approach, participants are chosen who provide the most significant explanatory and reasoning power, and their selection continues until theoretical saturation is achieved, meaning when new data no longer differ from previously collected data. When the research reaches a point of diminishing returns in data collection, the research is considered sufficient.

To achieve reliability, with the participants' consent, all interviews were recorded, transcribed, carefully analyzed, and coded. Then, two interviews were randomly selected, and a research colleague, after receiving the necessary training, was asked to independently code them. The Kappa coefficient was calculated at 75%, indicating an appropriate level of agreement. In this formula, the ratio of a specific value used by one coder within a category is multiplied by the ratio of the same value used by the second coder. These ratios are summed to determine the expected agreement. If the Kappa value exceeds 60%, reliability is confirmed.

To further assess reliability, the test-retest method was also applied. This method refers to the consistency of data classification over time. Out of all the interviews, three were randomly selected, and each was coded twice within a 30-day interval. The identified codes in the two coding sessions were compared for each interview. Based on agreements and disagreements, the stability index was calculated. For each interview, codes that were identical in the two sessions were marked as agreements, while differing codes were marked as disagreements. The formula for calculating test-retest reliability using the stability index is as follows:

(Number of agreements × 2) / Total number of codes

To ensure the content validity of the interview questions, the CVR (Content Validity Ratio) and CVI (Content Validity Index) were used. A panel of five experts reviewed the questions, and all essential questions were confirmed. Accordingly, the CVR value was calculated as 0.99, which falls within the acceptable range based on the minimum CVR value of 0.99 for a five-member panel. The overall CVI was also calculated as 0.89, indicating the content validity of the questions.

3. Findings and Results

Initial coding of the text is performed after repeatedly and carefully reading its content. Meaningful units are introduced, explained, and labeled. These units may be words, phrases, or larger segments of text, and these categories are referred to as "themes." After classification, the meaningful units of the text are organized as categories. Strauss and Corbin (1998) named this type of coding "open coding" and suggested that during this phase, frequent questions should be asked to resolve ambiguities in coding.

In the open coding phase, all interviews conducted with managers and experts were separately transcribed, and all sentences related to the key research topics were fully recorded and coded. The researcher then interpreted each of these key points and coded them accordingly. It is worth mentioning that, to ensure proper and accurate coding of the key points, the views of experts were consulted. After the open coding by the primary researcher, a second researcher was asked to help by re-coding all the opinions based on their specialized perspective. Finally, the final code was selected for each of the key points, and these codes were numbered.

Subsequently, axial coding (the second level of coding) is the term used for secondary operations in grounded theory analysis, where the main categories from the open coding phase are developed and connected with each other. The term axial coding, introduced by Strauss and Corbin, is used with the aim of linking the categories defined in open coding. If in open coding, we break the data and separate it, or open the data and theoretical categories, axial coding then reintegrates the previous categories in different conceptual ways. Thus, in axial coding, internal relationships are established between the core categories that were expanded in open coding.

At this stage, all the open codes extracted from the first phase were summarized into main axes based on their relationship with the core concepts of the research. The output of this phase consists of the axial codes, the corresponding codes, and their frequency of occurrence. In the related tables, each row contains a concept, which is actually a combination of several codes. In the next column, the corresponding codes for that concept and their frequency in various interviews are listed.

The third operation in grounded theory analysis is selective coding. The term "selective" is used in this phase because the analyst explicitly selects one central aspect of the data as the "core category" and focuses on it. Therefore, in selective coding, we use the same techniques applied in axial and open coding, but at a higher level of abstraction. This focus is now on finding a higher concept: a central conceptual category at the second level of abstraction.

Based on the above explanation, in this phase, the axial codes from the previous stage were grouped, and the final table of variables and related indicators for each of them, from the perspective of specialists and managers in the field of accounting and auditing in internal control systems, was prepared (Table 1).

Table 1. The Results of Qualitative Analysis

Category Type	Category	Questions
Causal Conditions	Board of Directors Structure	The number of members in the board and their diversity has a direct impact on the quality of decision-making, oversight of company activities, and improvement of internal controls. The backgrounds and expertise of board members in areas related to internal controls, risk management, and finance can play an important role in improving the quality of internal controls. The level of independence of the board from executive management and its impact on decision-making and oversight can serve as a critical criterion for evaluating the quality of internal controls. Effective communication and coordination between the board and executive management can facilitate the improvement of internal controls and prevent interference due to failures in these interactions. The existence of regular processes for evaluating the performance of the board and linking these evaluations to the improvement of internal controls can serve as a critical measure for evaluating the impact of the board's structure on the quality of internal controls.
	Internal Auditor Characteristics	The internal auditor must possess the necessary expertise and skills in internal controls and auditing, and be familiar with the principles of professional auditing and relevant ethics. Proficiency in auditing standards and methods, risk analysis, and the ability to provide suggestions for improving weaknesses are essential skills for an internal auditor. The internal auditor must act independently in performing duties and behave non-conflictually with other individuals, particularly with executive management. The independence of the internal auditor allows them to identify and report issues that may compromise the quality of internal controls. The internal auditor must have the ability to communicate effectively with other members of the organization. This includes active listening, effective communication with stakeholders, and the ability to collaborate with others in the organization to improve internal controls. The internal auditor must have a proper understanding of the business environment and associated risks. This includes understanding the organization's processes and activities, the monitored environment, and external factors. Strong and effective supervision by the internal audit team leadership can significantly improve the quality of internal controls. These leaders must be able to regularly and accurately review activities, processes, and control methods, identifying strengths and weaknesses. The use of information technology and modern management tools can significantly improve the quality of internal controls.
	Board Committees	The audit committee can identify the strengths and weaknesses of internal controls by reviewing audit reports and their recommendations, and suggest necessary improvements. Establishing a risk assessment committee with a focus on timely identification of risks can significantly improve the quality of internal controls in the organization and assist managers in managing risks more effectively. The corporate governance committee, by overseeing the implementation of the organization's strategies and ensuring that management decisions align with the organization's goals and ethics, can facilitate the improvement of internal controls.
Core Phenomenon	Environmental Factors	The complexity in the organizational structure and its processes can impact the quality of internal controls. The greater the complexity of the information, the higher the probability of errors and failures in controls. Asymmetry in the information between managers and auditors can lead to inaccurate assessments of internal controls and failure to identify existing risks. Transparency and proper communication can affect the quality of internal controls. If information and organizational processes are fully and transparently available, the likelihood of errors and failures in controls will be higher. Ensuring accountability and continuous follow-up on control issues enhances the effectiveness and quality of internal controls. Management’s commitment to conducting transactions within legal and ethical frameworks is critical and can strengthen internal controls and prevent violations.
	Performance Factors	The quality of audit information also affects the quality of internal controls. If audit information is not provided accurately and comprehensively, internal controls will not function effectively. The quality of financial reporting also affects internal controls. Financial reports must be accurate and comprehensive to allow for the precise identification of various risks. The size of the internal audit unit also impacts the quality of internal controls. The internal audit unit must be capable of identifying organizational risks and providing managers with the necessary information in this regard.
Strategies (Actions and Interactions)	Proper Documentation of Procedures	The documentation of procedures must be accurate, precise, comprehensive, and complete in order to support the improvement of internal controls. This includes verifying documentation, reviewing the accuracy and feasibility of procedures. Documentation must be executable; if procedures are not executable, improvements in internal controls may not be achieved.
	External Auditing	Selecting a reputable auditing firm can provide more credibility and assurance to the company’s internal controls. The implementation of mandatory rotation policies and auditor tenure can ensure regular replacement of auditors and reduce the likelihood of inappropriate collaboration or conflicts of interest. The auditor's opinion on the effectiveness and quality of internal controls provides valuable information to managers and other administrators, allowing for necessary improvements. The fees paid to auditors may also impact the quality of auditing services and, consequently, internal controls.

	Organizational Components	Focusing on risk management in the organization and implementing related controls is an influential factor on the quality of internal controls. Adherence to corporate governance principles and applying appropriate governance standards helps improve internal controls. An organizational culture that strengthens the belief in the importance of internal controls, transparency, and correcting improper behaviors contributes to improving the quality of internal controls. The type of organization can also affect internal control quality, as public and quasi-public organizations often have different structures and processes compared to private organizations.
Contextual Factors	Ownership Structure	If the ownership concentration in an organization is very high and a few individuals own the company, this can directly affect the quality of internal controls. In such cases, management decisions may be based on personal interests and weak ethical considerations. In government and non-profit organizations, ownership generally belongs to the government or a specific institution. In this case, the institution or government typically acts as the main owner and makes key decisions regarding internal controls. In government organizations, ownership directly belongs to the government, and close supervision by various government boards over the organization's performance and internal controls can be beneficial.
	Corporate Structure	Large and complex companies typically require stronger internal control systems to improve risks and weaknesses. Therefore, the quality of internal controls in larger companies may be more significant. Rapid company growth may lead to structural and operational changes. In such cases, there is a need to revise and improve internal controls to align with the new organizational changes and reduce risks arising from growth. Voluntary disclosure of financial and non-financial information to customers, shareholders, and the public can build greater trust in the company. This trust can have a direct impact on internal control quality, as providing transparent and reliable information reduces the likelihood of violations or system deficiencies. The use of financial leverage to fund the company's capital increases debt-related risks. Therefore, companies with higher leverage need stronger internal controls to manage debt-related risks and improve their internal control quality. The quality of internal controls can directly affect the company's stock price. Organizations with stronger internal controls gain the trust of shareholders and investors, which can lead to an increase in stock value and price. Changes in ownership and shareholder composition require appropriate control mechanisms. Different suppliers and changes in share composition can have an impact, requiring proper internal controls to maintain control over the company. If a company is part of a business group, the internal controls related to coordination, reporting, and control among branches and different units are crucial. The quality of internal controls in this area can significantly affect the performance and progress of the business group. Companies that have been operating for a longer time generally possess more experience and a longer track record. Strong internal controls and acceptable managerial experience for younger organizations may lead to improvements in the company's internal control quality. The corporate structure plays an important role in internal controls. A corporate structure based on effective governance principles is typically a more strategic organization, providing a framework to enhance the quality of internal controls.
Consequences	Impact of Internal Controls on Asset Protection	Internal controls improve organizational processes. Since organizational processes are central to internal controls, their enhancement leads to improved internal controls and, consequently, better protection of the organization's assets. Internal controls contribute to transparency and integrity in organizational processes. When processes and activities are fully transparent, the likelihood of fraud and other financial deficiencies decreases, which in turn protects organizational assets. Internal controls also increase employee awareness regarding the proper use of organizational assets and adherence to relevant regulations. As employee awareness rises, the likelihood of errors and deficiencies in handling organizational assets decreases, leading to better asset protection. Internal controls contribute to increased public trust in the organization. Since public trust plays a significant role in asset protection, strengthening internal controls can enhance public trust, thereby improving asset protection.
	Effectiveness of Internal Controls in Reducing Risks and Penalties	The implementation of internal controls reduces the likelihood of fraud and abuse within the organization. This, in turn, reduces the probability of legal and financial penalties for the organization. In other words, internal controls help mitigate financial damages to the organization.
	Impact of Internal Controls on Organizational Productivity	Internal controls improve operational performance by establishing processes, procedures, and policies that enhance the execution of organizational operations, increase quality, and reduce errors. This leads to improved productivity, efficiency, and better utilization of organizational resources. Strengthening the culture of internal control within the country significantly improves the quality of internal controls. Increasing awareness of the importance of internal controls and commitment to adhering to them helps reduce errors and potential deficiencies within organizations. The deterrence of concealing economic facts and fostering transparency at a broader societal level improves internal control quality. When information about organizational performance and activities is regularly available, individuals and organizations can enhance their internal control methods and address related issues.
	Impact of Internal Controls on Customer Satisfaction	The deterrence of concealing economic facts and fostering transparency at a broader societal level improves internal control quality. When information about organizational performance and activities is regularly available, individuals and organizations can enhance their internal control methods and address related issues. Internal controls ensure quality products and services by establishing specific processes and standards. This, in turn, increases customer trust in the products or services offered, leading to higher customer satisfaction. Internal controls reduce errors and mistakes in production or service delivery processes, improving the accuracy and reliability of the products or services. This directly impacts customer satisfaction. Internal controls, by ensuring the credibility and reliability of products or services, increase customer trust in the organization, which directly influences customer satisfaction.
	Quality of Financial and Non-Financial Information	In addition to financial information, non-financial information such as data related to customers, operational processes, risks, human resource management, and other areas also plays a critical role in assessing internal controls. Non-financial information can indicate the proper use of resources and processes within the organization. The quality of this information can be considered a key consequence in identifying and assessing factors affecting the quality of internal controls.

In this section, the concepts related to the categories of the final model of internal control quality are prioritized using the Friedman test. It is observed that among the concepts of the internal control quality model categories, the highest priority according to the respondents is related to the concept Q51, which deals with political factors as

intervening factors, while the lowest priority is related to Q54, concerning regulatory and market factors as intervening factors (Table 2).

Table 2. Friedman Test - Prioritization of Categories in the Internal Control Quality Model

Main Category	Subcategory	Concept Symbol	Mean Rank	Rank
Causal Conditions	Board Structure	q1	32.89	65
		q2	39.18	10
		q3	38.90	14
		q4	38.81	15
		q5	37.77	29
	Internal Auditor Attributes	q6	34.15	57
		q7	36.24	45
		q8	36.77	40
		q9	38.10	26
		q10	36.78	39
		q11	37.51	30
	Board Committees	q12	38.15	24
		q13	35.56	50
		q14	38.70	17
Core Phenomenon	Environmental Factors	q15	33.72	62
		q16	40.42	2
		q17	35.09	52
		q18	39.32	9
		q19	39.33	8
	Performance Factors	q20	39.17	11
		q21	39.40	7
		q22	39.48	5
Strategies	Proper Documentation of Procedures	q23	35.82	49
		q24	38.76	16
	External Auditing	q25	32.51	68
		q26	33.73	61
		q27	37.49	31
		q28	38.16	23
	Organizational Components	q29	35.18	51
		q30	31.06	69
		q31	29.22	71
		q32	34.02	58
Contextual Factors	Ownership Structure	q33	32.52	67
		q34	34.65	55
		q35	38.32	20
	Company Structure	q36	37.88	28
		q37	36.50	42
		q38	37.38	32
		q39	38.25	21
		q40	37.21	34
		q41	37.32	33
		q42	36.33	43
		q43	32.57	66
		q44	36.93	38
	Managerial Decisions	q45	39.40	6
		q46	36.16	46
Intervening Factors	Economic Factors	q47	39.01	13
		q48	40.16	3
		q49	37.03	37
	Political Factors	q50	38.12	25
		q51	40.81	1
		q52	33.66	63
	Regulatory and Market Factors	q53	30.45	70

		q54	29.16	72
	Legislation	q55	36.13	47
		q56	35.02	53
		q57	33.35	64
		q58	39.81	4
		q59	39.13	12
Consequences	Impact on Asset Protection	q60	33.85	60
		q61	37.16	35
		q62	37.07	36
		q63	36.75	41
	Efficiency in Risk and Penalty Reduction	q64	38.36	19
	Impact on Organizational Productivity	q65	34.66	54
		q66	34.47	56
		q67	36.29	44
	Impact on Customer Satisfaction	q68	38.21	22
		q69	36.06	48
		q70	37.97	27
		q71	38.58	18
	Obtaining Financial and Non-Financial Information	q72	33.91	59

In this section, the categories of the final model of internal control quality are prioritized using the Friedman test. It is observed that among the categories of the internal control quality model, the highest priority according to the respondents is related to the category of performance factors concerning the core phenomenon, while the lowest priority is related to regulatory and market factors concerning the intervening factors (Table 3).

Table 3. Friedman Test - Prioritization of Categories in the Internal Control Quality Model

Main Category	Subcategory	Mean Rank	Rank
Causal Conditions	Board Structure	10.786	10
	Internal Auditor Attributes	10.249	14
	Board Committees	10.885	8
Core Phenomenon	Environmental Factors	11.021	6
	Performance Factors	11.809	1
Strategies	Proper Documentation of Procedures	10.882	9
	External Auditing	10.247	15
	Organizational Components	8.753	19
Contextual Factors	Ownership Structure	10.000	16
	Company Structure	10.611	12
	Managerial Decisions	10.915	7
Intervening Factors	Economic Factors	11.369	3
	Political Factors	11.039	4
	Regulatory and Market Factors	8.060	20
	Legislators	10.620	11
Outcomes	Impact on Asset Protection	10.454	13
	Effectiveness in Reducing Risks and Penalties	11.461	2
	Impact on Organizational Productivity	9.910	17
	Impact on Customer Satisfaction	11.037	5
	Quality of Financial and Non-Financial Information	9.894	18

4. Discussion and Conclusion

The results of the qualitative research reveal the following categories: causal conditions; board structure, internal auditor attributes, board committees. Core conditions; environmental factors, performance factors. Strategies (actions and interactions); proper documentation of procedures, external auditing, organizational components. Contextual factors; ownership structure, company structure, managerial decisions. Intervening factors; economic factors, political factors, regulatory and market factors, legislators. Outcomes include; the impact of internal controls on asset protection, the effectiveness of internal controls in reducing risks and penalties, the impact of internal controls on organizational productivity, the impact of internal controls

on customer satisfaction, and the quality of financial and non-financial information.

The results of this study provide a comprehensive framework for understanding the factors influencing the quality of internal controls. By analyzing causal conditions, central phenomena, strategies, intervening factors, and outcomes, this research highlights the significance of internal control systems in organizations. The findings indicate that functional factors (operational factors) were ranked as the most critical determinants of internal control quality, while regulatory and market factors were assigned the lowest priority.

The high prioritization of operational factors aligns with Feng et al. (2015), who demonstrated that weak internal controls lead to operational inefficiencies, including issues like over-management of inventory. Effective internal controls are pivotal for ensuring reliable financial reporting and improving overall firm operations [16]. Similarly, Liu, Lin, and Shu (2017) emphasize the role of employee quality and the monitoring environment in enhancing operational performance. This study's findings support these conclusions, underlining that operational effectiveness is directly tied to the success of internal controls [17]. Notably, Oussii and Boulila Taktak (2018) confirm that internal audit functions play a key role in ensuring operational stability and internal control quality, as consistent monitoring helps identify and mitigate risks [15].

The importance of causal conditions, such as the board of directors' structure and auditor characteristics, is consistent with previous literature. For instance, Bazarafshan (2016) highlighted that a competent audit committee significantly enhances internal control effectiveness by improving financial oversight [18]. Likewise, Jafari et al. (2022) found that managerial narcissism moderates the relationship between auditor characteristics and internal control quality, emphasizing the need for independence and professionalism among auditors [13]. The current study also identifies the role of audit committee independence and expertise, which directly impact the board's capacity to oversee and ensure strong internal controls.

The findings further highlight that environmental factors such as complexity, transparency, and accountability are significant contributors to internal control quality. These results resonate with Cheng, Li, and Zhao (2024), who discussed the transformative role of digitalization in improving transparency and governance [1]. As organizations grow more complex, internal control systems must adapt to ensure data transparency and minimize asymmetries between managers and auditors. The results are also consistent with Zhou, Chen, and Cheng (2016), who found that internal controls become more critical as firms progress through different stages of their life cycle, directly influencing corporate performance [5].

Intervening factors, such as economic, political, and regulatory variables, were ranked as moderately impactful. This outcome aligns with Sun (2016), who reported that economic instability and weak internal control disclosures can affect investment decisions [19]. Similarly, Taheri, Shahmoradi, and Mo'in al-Din (2018) found a gap between the current state of internal controls and the desired level, particularly in regulatory agencies [8]. The current study identifies economic factors as a critical influence, suggesting that financial stability and strong governance structures are necessary for effective internal control systems.

The strategies outlined in this study, such as proper documentation of procedures, external audits, and organizational components, underscore the significance of a systematic approach to internal controls. Lotfalian and Vali Pour (2014) emphasized that well-documented and transparent internal controls improve decision-making and organizational accountability [20]. Furthermore, Katiri and Sabri (2019) argue that frameworks for external audits enhance the credibility of internal control mechanisms [11]. The findings here align with these studies, demonstrating that external audits and standardized documentation play a crucial role in ensuring the reliability of internal control processes.

From a consequence perspective, this study finds that effective internal controls significantly contribute to protecting organizational assets, reducing risks, and improving productivity. This conclusion supports the findings of Boulhaga et al. (2023), who demonstrated that internal control quality strengthens governance and improves firm performance [6]. Similarly, Jarah et al. (2023) highlight the mediating role of internal controls in enhancing employee performance through accounting information systems [4]. Internal controls also increase customer satisfaction by ensuring the reliability and quality of products and services, a result confirmed by Luukkanen et al. (2018), who identified internal audits as a critical mechanism for enhancing organizational trust and performance [21].

However, this study's findings indicate that regulatory and market factors were ranked as the least impactful elements. This result contrasts with Ji, Lu, and Qu (2019), who found that voluntary disclosure of internal control

weaknesses in regulated environments improves transparency and firm outcomes [14]. While the regulatory environment is critical for enforcement, the findings suggest that operational and governance factors have a more immediate impact on internal control quality.

This study has several limitations that must be acknowledged. First, the sample size was limited to 15 participants, which may not comprehensively represent diverse industries or organizational contexts. The reliance on interviews for qualitative data, while rich and insightful, may introduce biases related to participants' perceptions or experiences. Additionally, the study focuses primarily on internal factors and may not fully account for external influences such as macroeconomic changes, cultural variations, or technological advancements. Finally, while this study provides a prioritized framework, it does not quantitatively test the relationships between variables.

Future research should address the limitations identified in this study by employing larger and more diverse samples across industries and regions. A mixed-methods approach combining qualitative interviews with quantitative analysis could enhance the generalizability of findings and validate the proposed framework. Researchers are encouraged to explore the role of emerging technologies, such as artificial intelligence and blockchain, in strengthening internal controls. Further studies could also examine the dynamic interactions between regulatory environments and operational factors to identify areas for policy intervention. Additionally, longitudinal studies could provide insights into the evolving impact of internal control systems on organizational performance over time.

Organizations should prioritize operational factors, such as improving processes, data accuracy, and employee training, to strengthen internal control systems. Boards of directors must ensure independence and expertise among audit committees to effectively oversee internal controls. Management should implement systematic documentation of procedures and leverage external audits to enhance accountability and transparency. Firms are encouraged to integrate advanced technologies into their internal control systems to improve monitoring and risk management. Finally, creating a culture of accountability and awareness among employees about the importance of internal controls will foster compliance and improve organizational outcomes.

Authors' Contributions

Authors equally contributed to this article.

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

All procedures performed in this study were under the ethical standards.

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