

EXPLORING THE ROLE OF RISK-BASED INTERNAL AUDITING IN STRENGTHENING RISK MANAGEMENT PRACTICES: A DESCRIPTIVE STUDY

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ABSTRACT

Risk-based internal auditing (RBIA) has increasingly been recognized as a strategic approach for aligning audit functions with organizational risk exposures, thereby enhancing the effectiveness of risk management. This study explores the role of RBIA in medium-sized enterprises located in the Delhi-NCR region, employing a descriptive research design to capture current practices and perceptions. The findings reveal that RBIA practices are consistently rated higher than general risk management processes, suggesting that enterprises are more advanced in adopting structured audit frameworks than in embedding enterprise-wide risk management systems. However, the presence of considerable variability in responses indicated by standard deviations above 0.75 across multiple dimensions—highlights differing maturity levels among firms depending on sector, age, and turnover. These insights provide a foundational understanding of how RBIA is positioned within medium-sized enterprises in Delhi-NCR and underscore the need for deeper inferential analysis to assess causal relationships and sector-specific variations.

Keywords: Risk-Based Internal Auditing (RBIA); Risk Management; Medium-Sized Enterprises; Delhi-NCR; Descriptive Analysis; Internal Audit Effectiveness

1. INTRODUCTION

In today's dynamic business environment, medium-sized enterprises face a multitude of internal and external risks that can erode value if not properly identified, assessed, and managed. Risk-based internal auditing (RBIA) has emerged as a strategic tool for internal audit functions, shifting the auditor's focus from compliance-driven checks to more forward-looking assessment of the organization's key risk exposures, controls, and risk-mitigating practices [1][2]. By aligning the internal audit plan to the entity's risk universe and management priorities, RBIA enables auditors to provide assurance and advisory services on the most critical threats to organizational objectives rather than performing routine checks on low-risk processes [3][4].

For medium-sized enterprises, which often have fewer resources and less sophisticated formal risk management frameworks than large firms, RBIA offers the opportunity to strengthen risk awareness, enhance oversight of key operational and strategic risks, and improve the effectiveness of risk response mechanisms. Small and medium enterprises (SMEs) typically have limited risk-management capacity and may not systematically embed enterprise risk management (ERM) principles in their decision-making culture [5][6]. By using a risk-based audit lens, internal auditors in these firms can help bridge gaps in formal risk management – for instance, by detecting emerging or non-routine risks, evaluating

whether the business is operating within its risk appetite, and recommending improvements to control and monitoring processes [7][8].

The literature suggests that RBIA not only supports the identification and prioritization of risks, but also fosters better communication of risk exposures between management and audit committees, and promotes accountability for risk mitigation across organizational units. When executed properly—through a well-structured risk assessment, clear audit plan prioritization, and ongoing coordination with management—RBIA can make internal audit a more proactive and value-adding function, rather than merely a compliance checker [2][9][10].

However, the effectiveness of RBIA in medium-sized enterprises, especially in the Indian context and specifically within the Delhi-NCR region, has not been thoroughly explored in descriptive terms. There remain open questions about how medium-sized firms in this region actually structure their audit function, how they deploy risk-based approaches in practice, and whether such practices materially strengthen their risk management capability over time. This study aims to fill that descriptive gap by surveying and characterizing the current state of RBIA practice, its perceived strengths and limitations, and its contributions to risk management effectiveness in medium-sized enterprises operating in the Delhi-NCR region.

2.0 RESEARCH METHODOLOGY

2.1 Introduction

This section lays the foundation for a rigorous and credible empirical investigation by defining the methodological scaffolding of the study. By aligning research methods with the objectives of the study, the chapter ensures that the results derived from subsequent analysis are both reliable and relevant to policy, theory, and practice in the fields of auditing, governance, and enterprise risk management.

The rationale for adopting a quantitative research approach stems from the study's aim to measure and analyze perceptions, processes, and outcomes related to RBIA implementation in a statistically valid manner. Quantitative methods facilitate the examination of correlations, trends, and causal relationships between variables such as audit practices, risk identification, control effectiveness, and organizational performance. This approach also allows for generalizability of the findings to the broader population of medium enterprises in the Delhi-NCR region.

The research employs a cross-sectional survey design, leveraging structured questionnaires administered to key informants such as internal auditors, finance heads, risk managers, and enterprise owners. This design is suitable for capturing a snapshot of current practices, challenges, and effectiveness levels in internal audit and risk management functions. The use of a structured instrument ensures uniformity of responses and enables the application of parametric and non-parametric statistical techniques for hypothesis testing.

Sampling strategy and sample size determination are guided by both theoretical representativeness and practical feasibility. The study utilizes stratified random sampling to ensure that various sectors (Manufacturing, technology, logistics, and services) and geographic clusters (Gurugram, Noida, Delhi, Faridabad, and Ghaziabad) within the Delhi-NCR region are proportionally represented. This enhances the external validity of the findings and accounts for regional and industrial heterogeneity.

Primary data collection is supported by a pilot-tested questionnaire that includes both closed-ended and Likert-scale-based items, structured around key constructs such as audit strategy alignment, risk identification procedures, control design, risk reporting, and enterprise-level risk mitigation outcomes. Secondary data sources, including government reports, industry white papers, and academic literature, are used to triangulate and contextualize the primary findings.

For data analysis, the study employs descriptive statistics, correlation analysis, and regression modeling to examine the strength and direction of relationships between RBIA practices and risk management effectiveness. Additionally, advanced techniques such as exploratory factor analysis (EFA) and structural equation modeling (SEM) may be applied where appropriate to validate the measurement model and assess complex inter-variable linkages.

2.2. Objectives of the Study

1. To assess the current level of adoption of RBIA in medium enterprises in the Delhi-NCR region.
2. To examine the perceived and actual impact of RBIA on risk management effectiveness.
3. To identify internal and external factors influencing RBIA implementation.

2.3 Target Population

The selected medium-sized enterprises will span a diverse cross-section of industries, including but not limited to:

- Manufacturing: Auto components, electronics, plastics, packaging, chemicals
- Technology: IT services, software development, hardware assembly
- Textiles and Apparel: Garment exporters, design houses, weaving units
- Logistics and Warehousing: Cold chains, distribution centers, transport service providers
- Professional Services: Financial consultancy, engineering design, business process outsourcing (BPO)
- Healthcare and Pharmaceuticals: Diagnostic labs, medical equipment manufacturers
- Construction and Real Estate: Builders, project management firms, EPC contractors
- Hospitality and Tourism Services: Boutique hotels, event management firms



2.4 Sampling Technique

A stratified random sampling method will be used to ensure representation from diverse industry sectors. Each stratum (sector) will be proportionately represented based on the relative number of registered medium enterprises in the Delhi-NCR region. This ensures heterogeneity and reduces sampling bias.

Strata:

- Stratum 1: Manufacturing
- Stratum 2: Service (Finance, IT, Consulting)
- Stratum 3: Health & Pharma
- Stratum 4: Logistics & Infrastructure

Approximately 385 respondents which accommodate potential non-response or incomplete surveys, the sample size will be increased by 15%, targeting a final sample of around **440 respondents**.

2.5 Data Collection Methods

To achieve both breadth and depth in understanding the impact of Risk-Based Internal Auditing (RBIA), a mixed-methods approach is employed comprising quantitative and qualitative data collection strategies.

2.6 Data Analysis Techniques

Quantitative Data Analysis

Data collected through structured questionnaires will be subjected to statistical analysis using SPSS. The following analytical tools will be used:

Descriptive Statistics: To profile the sample and summarize data through measures like mean, standard deviation, percentages, and frequency distributions.

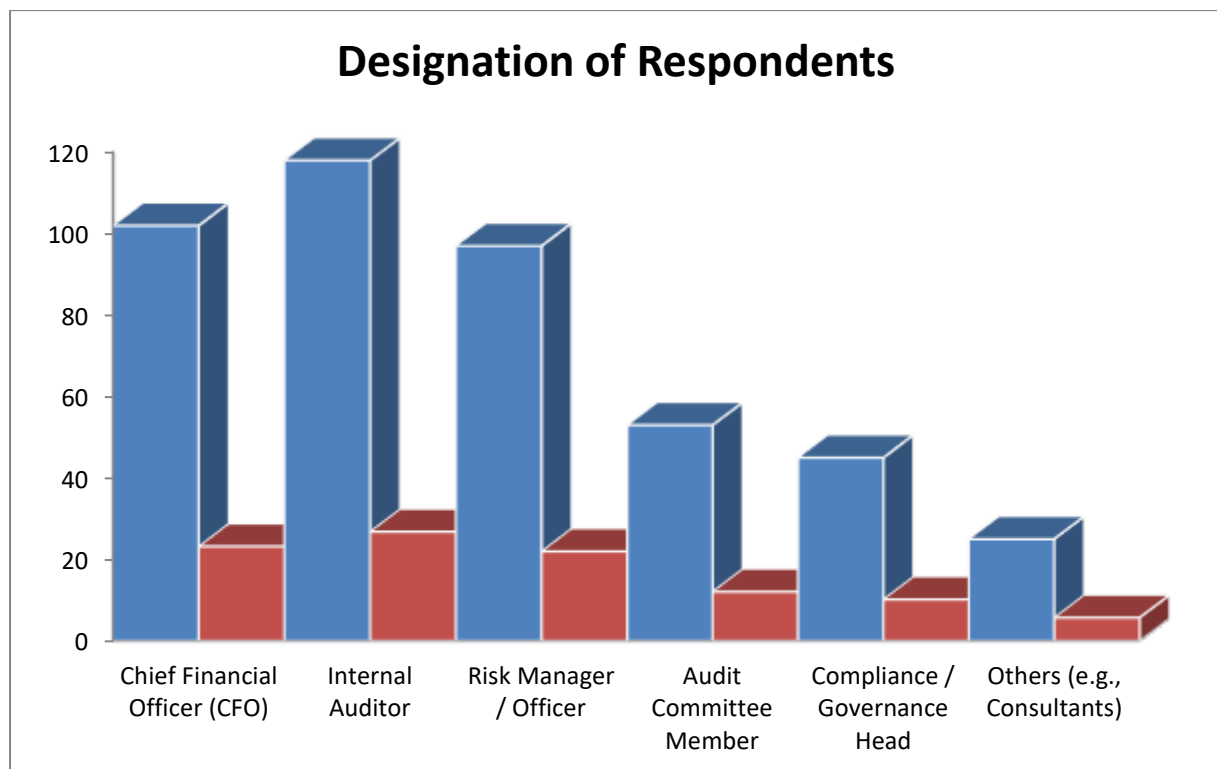
3. DATA ANALYSIS AND INTERPRETATION

3.1 Profile of Respondents

This section presents the demographic and organizational characteristics of the respondents who participated in the study. Understanding the profile of the respondents is essential for contextualizing the results and assessing the representativeness of the sample. Data was collected from 440 respondents across medium-sized enterprises in the Delhi-NCR region, including Delhi, Noida, Gurugram, Faridabad, and Ghaziabad. The following subsections detail key respondent attributes:

3.1.1 Designation of Respondents

To ensure insights from knowledgeable stakeholders, the survey targeted respondents holding strategic roles in audit and risk-related functions. The distribution is as follows:

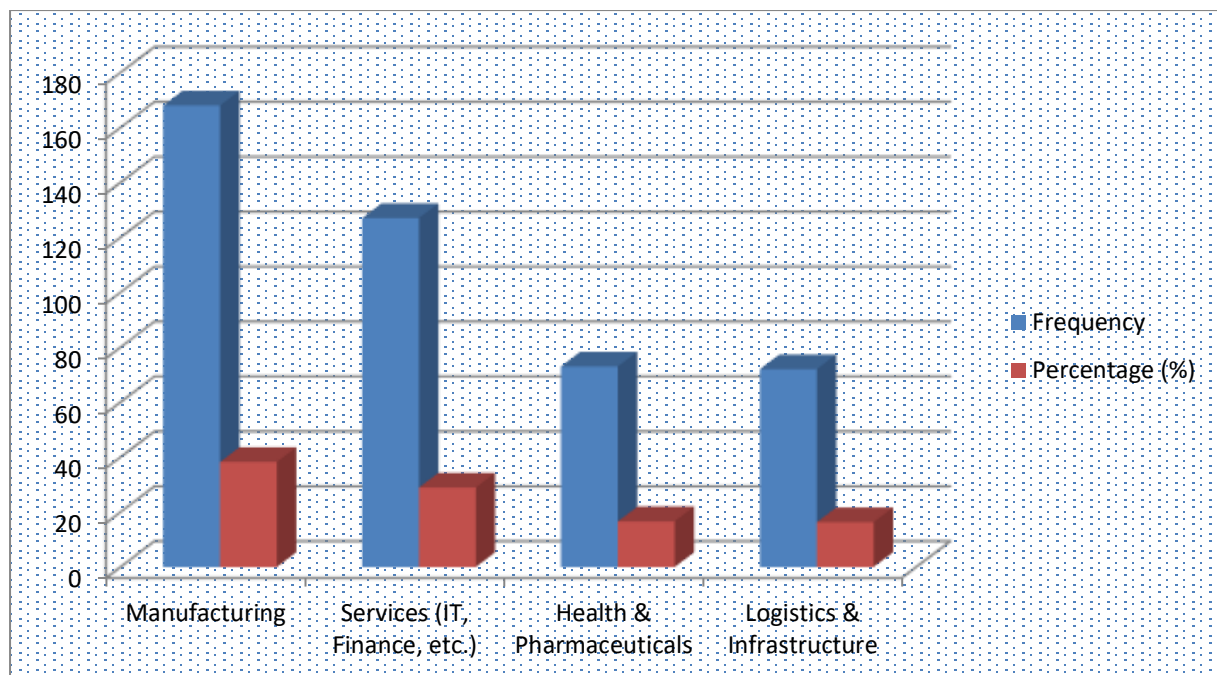


Graph 3.1: Frequency and percentage of Respondents Designation

The data presents the distribution of respondents based on their professional designations. Internal Auditors constituted the largest group, accounting for 26.8% (118) of the total 440 respondents. Close behind were Chief Financial Officers (CFOs), making up 23.2% (102) of the sample. Risk Managers or Officers followed with 22.0% (97), indicating a strong representation of financial and risk oversight roles. Audit Committee Members represented 12.1% (53), while Compliance or Governance Heads made up 10.2% (45) of the participants. The remaining 5.7% (25) fell under the category of 'Others', which includes consultants and other related professionals. This distribution reflects a diverse yet focused respondent pool predominantly involved in financial governance, internal controls, and risk management functions.

3.1.2 Sectoral Distribution

This distribution aligns with industrial prevalence in Delhi-NCR and facilitates sector-wise analysis of audit and risk practices. The sectoral distribution of respondents highlights a varied yet concentrated representation across key industries. The Manufacturing sector emerges as the most prominent, accounting for 38.2% of the total respondents, which translates to 168 individuals. This suggests a significant interest and involvement in the study from organizations engaged in production, industrial operations, and related activities. Following closely is the Services sector including IT, finance, and other related domains— with 127 respondents, representing 28.9% of the sample. This segment reflects the growing importance of service-oriented enterprises, particularly those driven by technology and financial services, in contemporary corporate landscapes.



Graph 3.2: Frequency and percentage of Sector Distribution

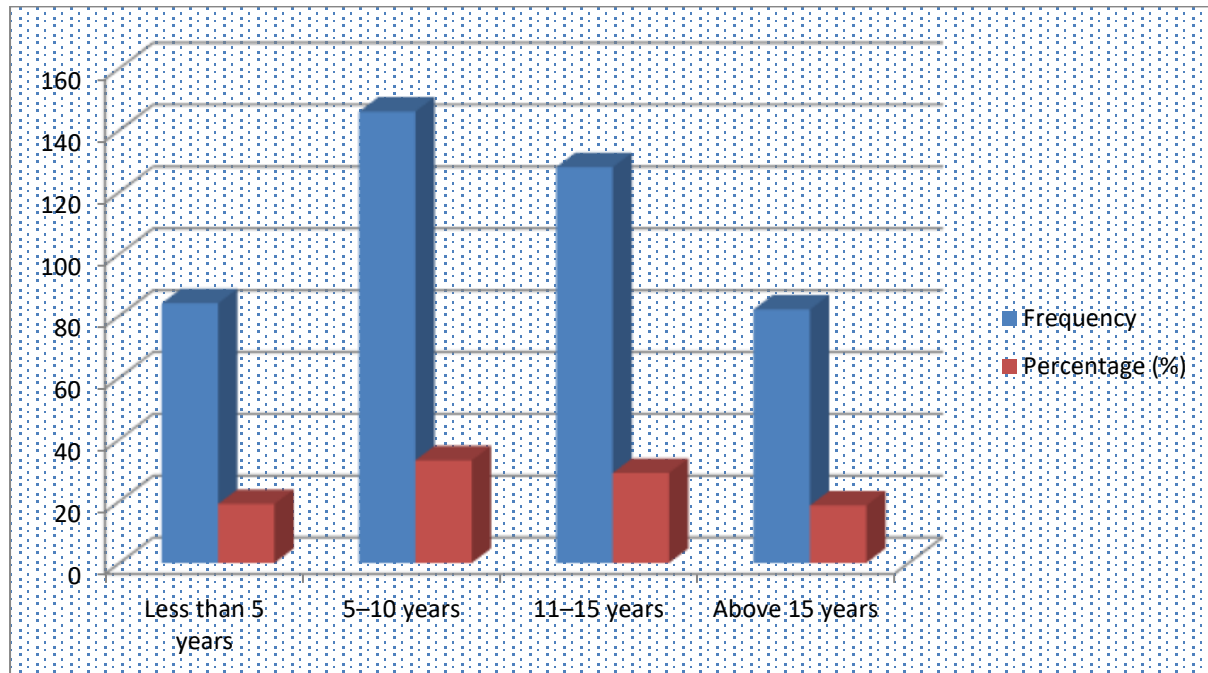
Health and Pharmaceuticals constitute 16.6% of the participants, indicating a notable presence of stakeholders from a sector that has gained heightened relevance, especially in the wake of global health challenges and increasing regulatory focus. Meanwhile, the Logistics and Infrastructure sector is represented by 72 respondents, making up 16.3% of the total. This group underscores the critical role of supply chains, transportation, and infrastructural development in sustaining organizational operations across industries.

3.1.3 Years of Professional Experience

Over 60% of respondents have more than 10 years of experience, which strengthens the credibility of the information obtained regarding internal controls and RBIA implementation. The distribution of respondents based on their experience level reveals a diverse mix of professional tenure, reflecting both emerging and seasoned perspectives within the sample. The largest group comprises individuals with 5 to 10 years of experience, accounting for 33.2% (146) of the total respondents. This indicates a significant portion of mid-career

professionals who likely possess a balanced blend of foundational knowledge and practical industry exposure.

Closely following are respondents with 11 to 15 years of experience, representing 29.1% (128) of the sample. This group reflects professionals who have advanced further in their careers, often occupying senior or specialized roles and contributing strategic insights to organizational decision-making processes.

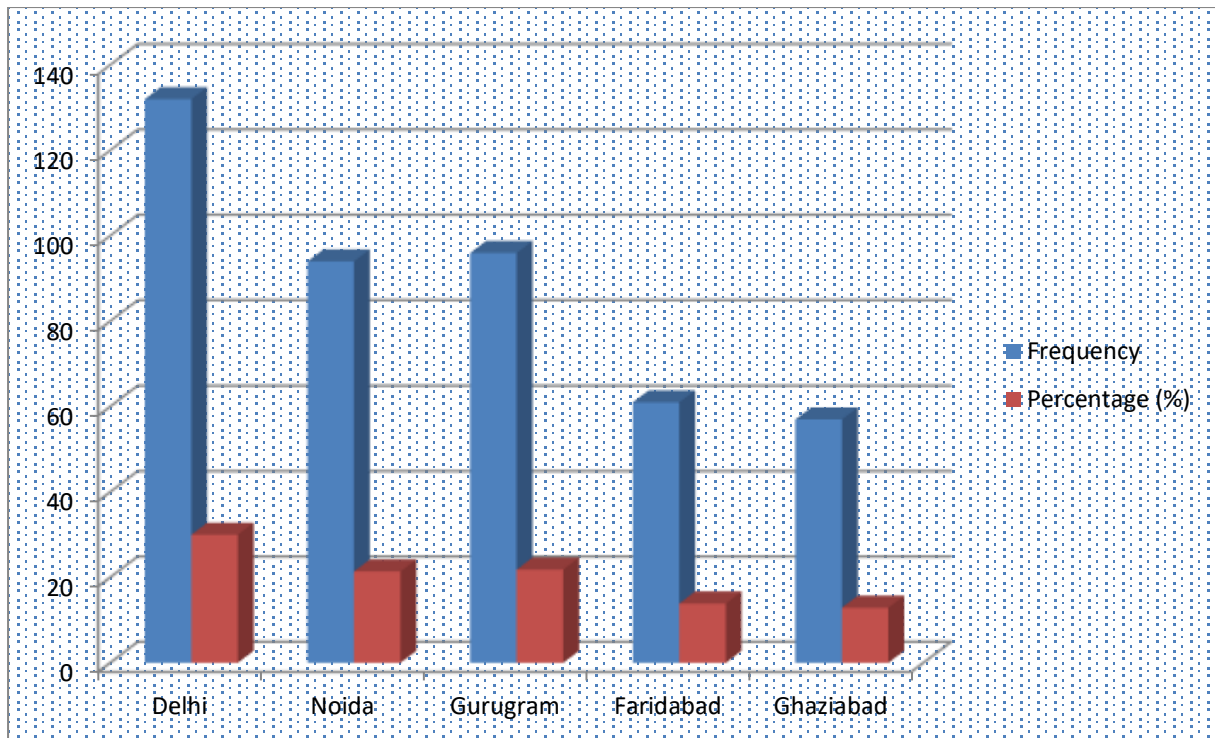


Graph 3.3: Frequency and percentage of Years of Professional Experience

Respondents with less than 5 years of experience make up 19.1% (84), suggesting a meaningful presence of early-career professionals who bring in fresh perspectives and may be at the stage of building competencies in their respective fields. Meanwhile, those with over 15 years of experience constitute 18.6% (82), representing the most seasoned segment. Their inclusion adds depth to the dataset, as they are likely to hold leadership positions and bring a wealth of institutional knowledge and industry expertise.

3.1.4 Geographical Distribution

This spread ensures comprehensive regional representation of enterprises from key industrial and service clusters. The regional distribution of respondents shows a strong concentration in the National Capital Region (NCR), with Delhi accounting for the highest proportion at 30.0% (132 respondents). This indicates that a significant number of participants are based in the capital, reflecting its central role in governance, corporate presence, and policy-making environments.



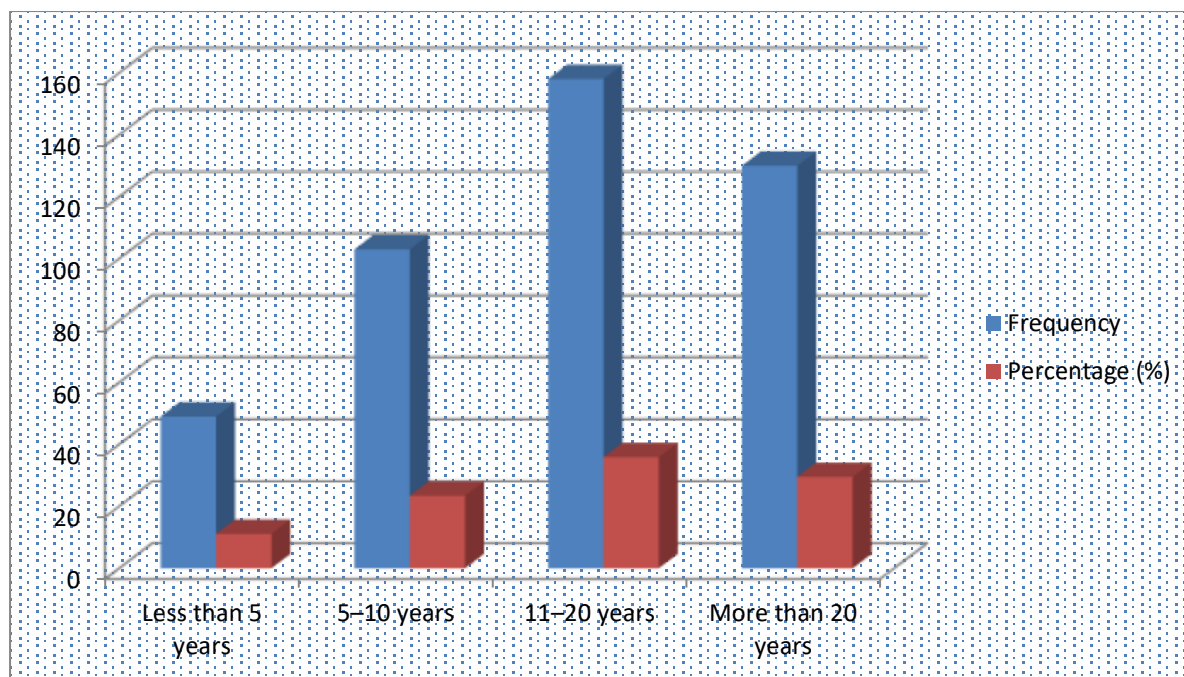
Graph 3.4: Frequency and percentage of Geographical Distribution

Gurugram follows closely with 21.8% (96 respondents), highlighting its status as a major corporate and financial hub, especially for multinational companies and large enterprises. Noida, another prominent business and technology center, contributes 21.4% (94 respondents), underscoring its relevance in sectors like IT, electronics, and services.

Faridabad and Ghaziabad represent 13.9% (61 respondents) and 12.9% (57 respondents) respectively, indicating their growing industrial and commercial importance within the NCR belt. While smaller in comparison to Delhi, Gurugram, and Noida, both cities contribute meaningfully to the overall landscape through manufacturing and logistics sectors.

3.1.5 Firm Age (Years Since Establishment)

The majority of firms have been operational for over a decade, indicating that the enterprises surveyed are likely to have well-established governance frameworks. The distribution of organizations based on their years since establishment reflects a well-balanced mix of both emerging and well-established entities. A substantial portion of the respondents 35.9% (158 organizations) have been in existence for 11 to 20 years, suggesting that many of the participating organizations have attained a mature operational phase with significant experience in their respective industries.



Graph 3.5: Frequency and percentage of Firm Age

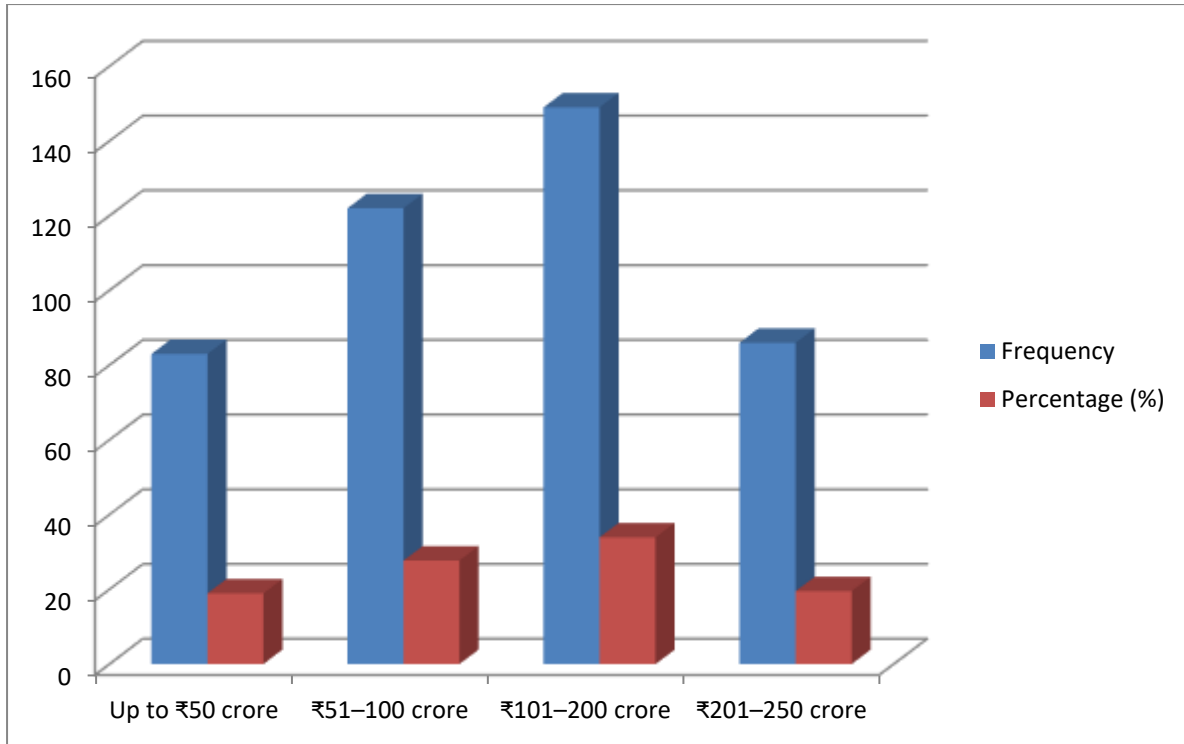
Organizations with a history of more than 20 years form the next largest group, comprising 29.5% (130). This indicates a strong representation from long-standing institutions that have likely witnessed various regulatory and market evolutions, and whose practices are deeply rooted in experience and stability.

On the other end of the spectrum, 23.4% (103 organizations) have been operational for 5 to 10 years. These entities typically reflect growing organizations that are expanding their footprint, building governance frameworks, and adopting industry best practices. The youngest segment, consisting of organizations established less than 5 years ago, accounts for 11.1% (49), highlighting the presence of startups and newer enterprises that bring fresh perspectives and agile approaches to business and compliance.

3.1.6 Size of Enterprise by Annual Turnover

More than half the firms fall within the ₹100–250 crore range, indicating significant operational and compliance complexity that justifies the relevance of RBIA adoption. The annual turnover distribution of the participating organizations reveals a predominance of mid-sized enterprises, with the highest proportion 33.9% (149 organizations) falling within the ₹101–200 crore range. This suggests that a significant share of the respondents is well-established businesses with substantial operational scales, likely possessing structured financial and compliance systems.

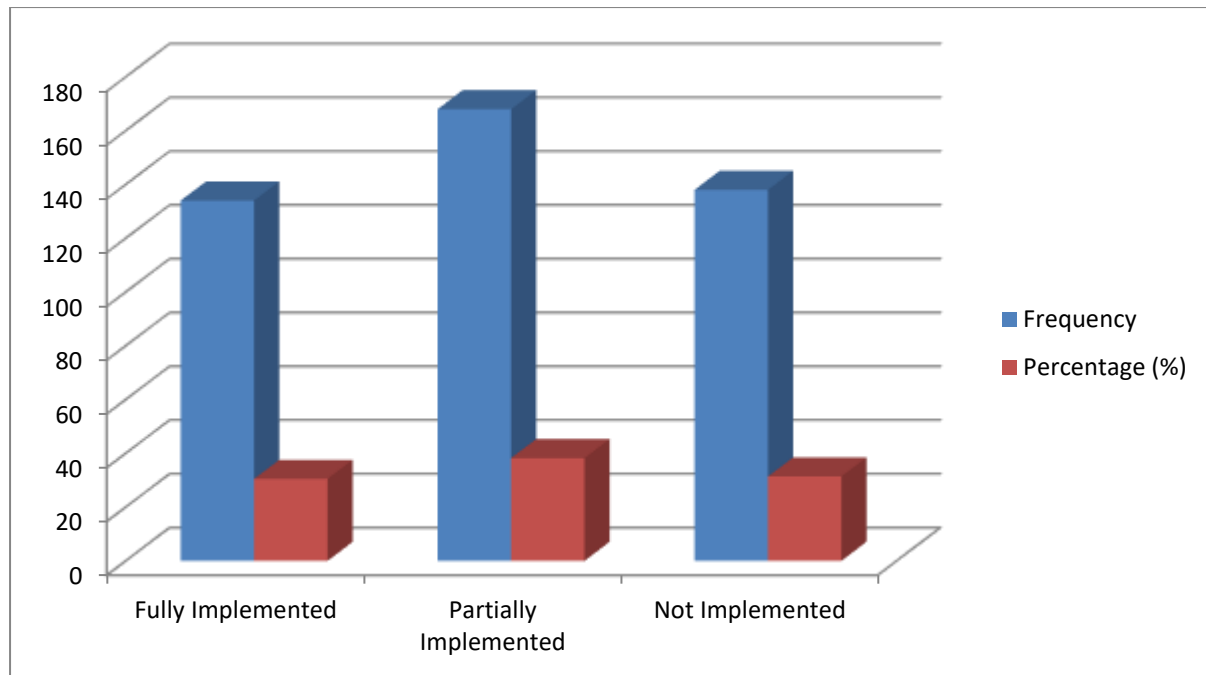
Organizations with a turnover between ₹51–100 crore make up 27.7% (122), representing a robust segment of growing businesses that are possibly transitioning from small-scale operations to more structured corporate frameworks. These entities often experience a phase of scaling up, both in terms of market presence and internal governance mechanisms.



Graph 3.6: Frequency and percentage of Annual Turnover

A considerable number of respondents, 19.5% (86 organizations), report turnovers in the ₹201–250 crore bracket. This indicates the participation of larger enterprises with more complex operational models and potentially broader regulatory responsibilities. Meanwhile, smaller organizations with turnovers up to ₹50 crore account for 18.9% (83), highlighting the representation of micro and small businesses that may have leaner structures but are still actively engaged in compliance and governance initiatives.

3.1.7 RBIA Implementation Status



Graph 3.7: Frequency and percentage of RBIA Implementation Status

The status of Risk-Based Internal Audit (RBIA) implementation among the surveyed organizations reveals a varied level of adoption, reflecting differing stages of maturity in internal audit practices. A significant portion 38.2% (168 organizations) has partially implemented RBIA, indicating that while the framework has been introduced, it is still in the process of being fully integrated into the audit and governance functions. This suggests a transitional phase where organizations are aligning their existing practices with risk-based methodologies.

Organizations that have fully implemented RBIA account for 30.5% (134), demonstrating a strong commitment to proactive risk management and strategic internal auditing. These entities are likely to have mature audit structures that emphasize risk prioritization and dynamic audit planning, in line with regulatory expectations and global best practices.

Conversely, 31.4% (138 organizations) have not yet implemented RBIA, highlighting a considerable segment where traditional audit approaches may still be in place or where resource or awareness constraints may be impeding adoption. This group may benefit from capacity building, regulatory guidance, or management push to move toward a more risk-aligned audit framework.

3.2 Descriptive Analysis of Key Variables

This section presents the descriptive statistical analysis of the two core constructs in the study: Risk-Based Internal Audit (RBIA) practices and Risk Management (RM) processes. The analysis includes measures of central tendency (mean), variability (standard deviation), and frequency distributions to provide a summary of how respondents perceive and implement these practices across their organizations. The responses were recorded on a 5-point Likert scale ranging from 1 = Strongly Disagree to 5 = Strongly Agree.

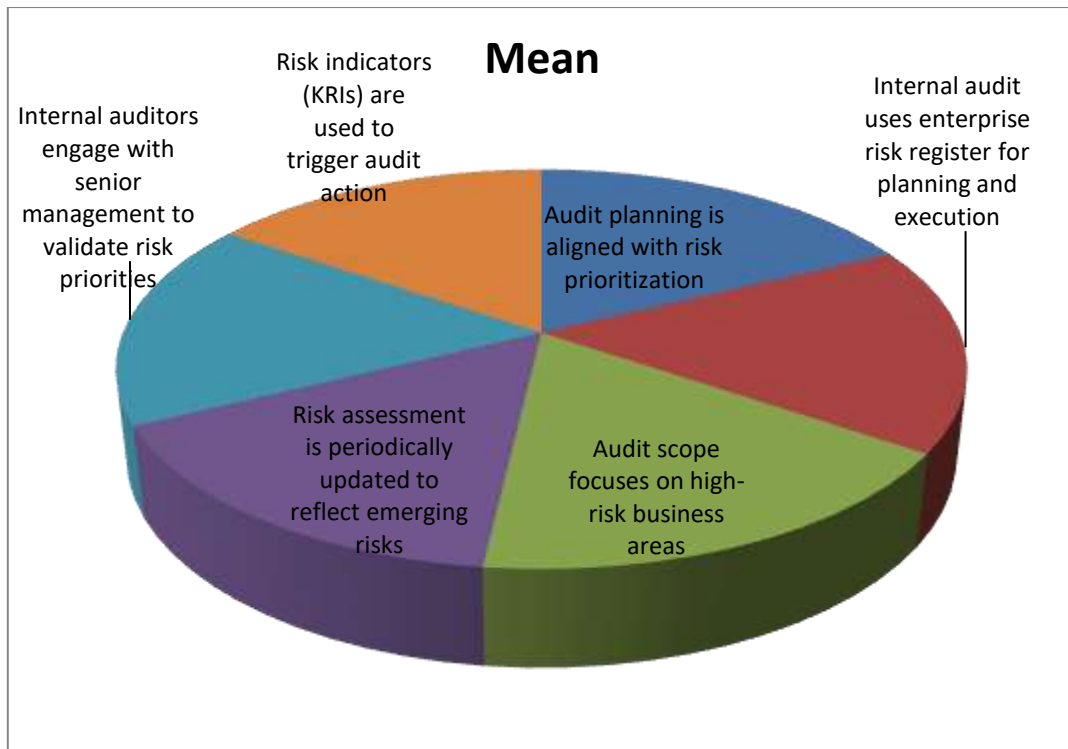
3.2.1 Risk-Based Internal Audit Practices

RBIA practices are evaluated based on six key dimensions commonly identified in literature and best practices (IIA Framework, ISO 31000):

Table 3.1: Risk-Based Internal Audit Practices

RBIA Practice Indicators	Mean	Standard Deviation
Audit planning is aligned with risk prioritization	4.12	0.76
Internal audit uses enterprise risk register for planning and execution	3.89	0.81
Audit scope focuses on high-risk business areas	4.01	0.68
Risk assessment is periodically updated to reflect emerging risks	3.67	0.85
Internal auditors engage with senior management to validate risk priorities	3.92	0.79
Risk indicators (KRIs) are used to trigger audit action	3.58	0.88
Overall Composite RBIA Score	3.87	0.79

The RBIA practice indicators reflect the maturity and effectiveness of Risk-Based Internal Audit implementation across various dimensions within organizations. The mean scores, measured on a Likert scale, suggest generally favorable adoption, though with some variation across specific practices.



Graph 3.8: Mean of Risk-Based Internal Audit Practices

Interpretation:

- The highest-rated practice was alignment of audit planning with risk prioritization (Mean = 4.12), reflecting a strong theoretical alignment in RBIA.
- The lowest-rated practice was the use of key risk indicators (KRIs) to trigger audit action (Mean = 3.58), suggesting a gap in real-time risk responsiveness.
- Overall, the mean composite score of 3.87 suggests that RBIA practices are moderately to well implemented in the surveyed enterprises, though standard deviations indicate some variability across organizations.

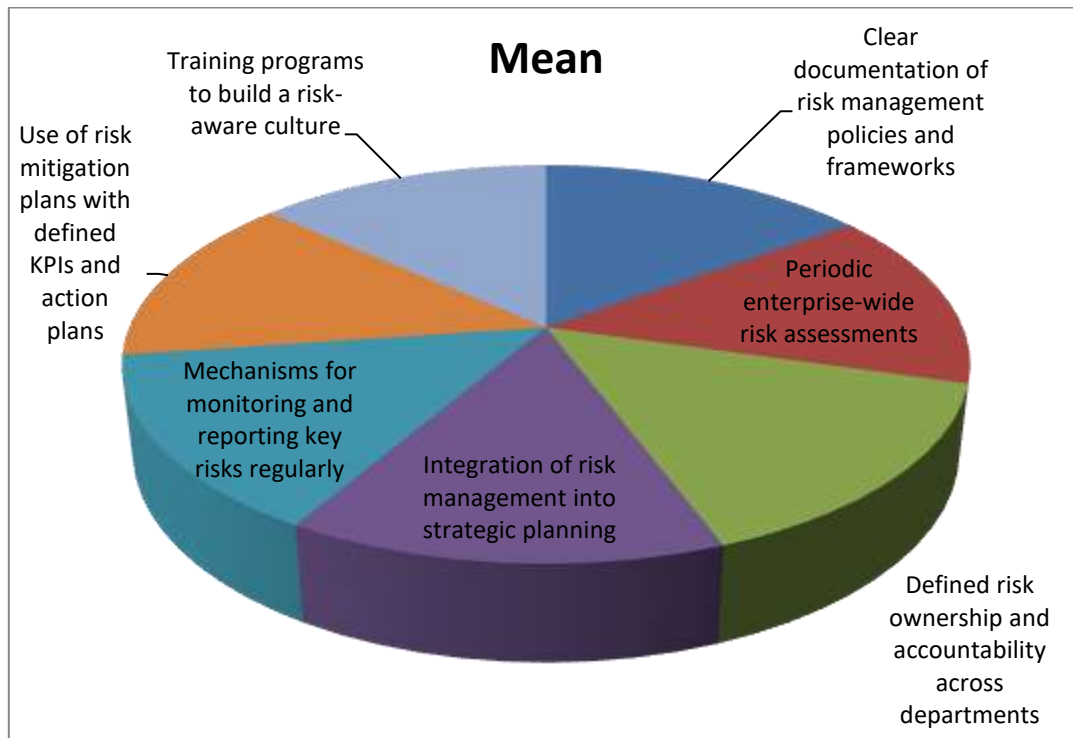
3.2.2 Risk Management Processes

Risk management (RM) processes were assessed across seven dimensions in line with COSO ERM and ISO 31000 standards:

Table 3.2: Risk Management Processes

Risk Management Indicators	Mean	Standard Deviation
Clear documentation of risk management policies and frameworks	3.84	0.74
Periodic enterprise-wide risk assessments	3.71	0.81

Defined risk ownership and accountability across departments	3.79	0.76
Integration of risk management into strategic planning	3.62	0.83
Mechanisms for monitoring and reporting key risks regularly	3.68	0.82
Use of risk mitigation plans with defined KPIs and action plans	3.54	0.87
Training programs to build a risk-aware culture	3.43	0.92
Overall Composite RM Score	3.66	0.82



Graph 3.9: Mean of Risk Management Processes

Interpretation:

- Risk documentation and ownership scored relatively higher, indicating procedural maturity in many organizations.
- Risk culture and training initiatives received lower scores, suggesting an **implementation gap** in softer aspects of risk governance.
- The overall composite score of **3.66** indicates that risk management processes are **partially institutionalized**, with room for improvement in integration and cultural reinforcement.

4. SUMMARY OF DESCRIPTIVE INSIGHTS

- **RBIA practices** are rated higher than general risk management processes, reflecting that medium enterprises may be more advanced in implementing structured audit frameworks than in embedding holistic risk management practices.
- **Variability in responses** (as indicated by standard deviations above 0.75 in several dimensions) points to inconsistent maturity levels across sectors and firm sizes within the Delhi-NCR region.
- These findings warrant deeper inferential analysis (see upcoming sections) to examine how RBIA influences RM effectiveness and whether these practices vary significantly by sector, firm age, or turnover.

5. CONCLUSION

The descriptive insights from this study underscore the growing importance of RBIA in strengthening risk management effectiveness among medium-sized enterprises in the Delhi-NCR region. The evidence suggests that internal audit functions in these firms are often more structured and methodologically advanced compared to their overall risk management frameworks. At the same time, the variability in maturity levels across enterprises indicates that RBIA is not yet uniformly institutionalized. While some firms demonstrate strong alignment between audit and risk management processes, others exhibit significant gaps, which could limit the overall effectiveness of their risk response mechanisms. The findings thus point toward the dual reality that, while RBIA is making notable strides in medium enterprises, comprehensive and consistent adoption across industries is still evolving. Consequently, future inferential analysis is essential to test the strength and significance of RBIA's impact on risk management effectiveness and to explore whether differences in sector, firm size, or organizational age account for observed disparities.

REFERENCES

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2. Risk-based internal audit (RBIA) is understood as an internal auditing methodology focused on inherent risk exposures and management's ability to keep those risks within the entity's risk appetite. [Wikipedia+1](#)
3. A true RBIA approach starts with a risk universe and risk assessment process, rather than a purely functional or process-based audit universe. [auditboard.com](#)
4. Risk-based auditing concentrates internal audit resources on the most pressing risks, delivering assurance and advisory services on those areas of greatest potential impact. [Wikipedia+1](#)
5. SMEs often have limited formal risk management practices and resources, which makes them more vulnerable to unmanaged risks. [ResearchGate+1](#)

6. Literature reviews suggest that SMEs frequently lack fully embedded enterprise risk management systems, relying instead on ad hoc or informal risk identification and mitigation practices. [Redalyc.org+1](#)
7. RBIA can help internal auditors identify non-routine or emerging risks that might be overlooked in traditional audit planning, thereby strengthening organizational resilience and oversight. [auditboard.com+1](#)
8. When internal audit adapts to a risk-based approach, internal auditors can help assess whether business units are operating within accepted risk appetite and provide recommendations for strengthening control and monitoring. [auditboard.com+1](#)
9. Studies of internal audit effectiveness find that a risk-based audit methodology tends to increase the relevance of audit work and improves communication with senior management and board oversight. [virtusinterpress.org+2virtusinterpress.org+2](#)
10. Implementation of RBIA often requires innovation in internal audit planning, more continuous coordination with management, and an ongoing understanding of changing business risks, rather than periodic static audits. [The Institute of Internal Auditors+2imcra-az.org+2](#)