

A Literature Review Toward an AIRI Framework: Auditing Investigation  
Records and Information in Enforcement Agencies

Sorotan Literatur ke Arah Pembangunan Kerangka AIRI: Pengauditan Rekod  
dan Maklumat Siasatan dalam Agensi Penguatkuasaan Undang-Undang

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ABSTRACT

Information Audit (IA) plays a critical role in evaluating and optimising Records and Information Management (RIM) practices to ensure regulatory compliance and organizational efficiency. Over time, IA has evolved from a basic inventory of information sources into comprehensive frameworks supporting strategic objectives and operational effectiveness. However, a persistent gap remains in the standardization of IA methodologies, particularly regarding the auditing of investigation records and information (AIRI) within law enforcement and investigative environments. This paper presents a comprehensive literature review tracing the development of IA frameworks, highlighting their limitations when applied to auditing investigative records. It identifies significant deficiencies in existing IA methodologies, including their predominantly resource-focused orientation and lack of robust compliance and evidentiary assurance mechanisms. Preliminary empirical findings from a case study conducted with a major law enforcement agency further reinforce the practical need for a specialised AIRI framework. The study proposes that adapting and contextualising existing IA standards and models is essential for developing a structured, compliance-driven AIRI framework capable of addressing the operational, procedural, and evidentiary complexities unique to investigation records management.

**Keywords:** Information Audit, Records Management, Information Management, Investigation Records, Law Enforcement Agency

ABSTRAK

Audit Maklumat (AM) memainkan peranan penting dalam menilai dan mengoptimumkan amalan Pengurusan Rekod dan Maklumat (PRM) bagi memastikan pematuhan terhadap

peraturan serta kecekapan organisasi. Sepanjang perkembangannya, AM telah berkembang daripada kaedah inventori maklumat asas kepada kerangka komprehensif yang menyokong pencapaian objektif strategik dan keberkesanan operasi. Namun, jurang ketara masih wujud dalam penyeragaman metodologi AM, khususnya berkaitan dengan pengauditan Rekod dan Maklumat Siasatan (AIRI) dalam agensi penguatkuasaan undang-undang dan persekitaran penyiasatan. Kertas kajian ini membentangkan sorotan susastera komprehensif yang menelusuri evolusi kerangka AM dan menyoroti keterbatasannya apabila diaplikasikan kepada pengauditan rekod siasatan. Kajian ini mengenal pasti kekurangan utama dalam metodologi AM sedia ada, termasuk kecenderungan berfokuskan sumber serta ketiadaan mekanisme pematuhan dan jaminan kebolehpercayaan bukti yang kukuh. Penemuan empirikal awal daripada kajian kes yang dilaksana di sebuah agensi penguatkuasaan undang-undang utama turut mengukuhkan keperluan praktikal terhadap pembangunan kerangka AIRI khusus. Kajian ini mencadangkan bahawa penyesuaian, piawaian, dan model AM sedia ada adalah penting untuk membangunkan kerangka AIRI berstruktur dan berasaskan pematuhan, yang mampu menangani kerumitan operasi, prosedur, dan pembuktian dalam pengurusan rekod siasatan.

Kata kunci: Audit Maklumat, Pengurusan Rekod, Pengurusan Maklumat, Rekod Penyiasatan, Agensi Penguatkuasaan Undang-Undang

## INTRODUCTION

Auditing is a systematic process designed to examine, discover, monitor, and evaluate various aspects within an organization (Lateef and Omotayo 2019). According to ISO19011, an audit is defined as a systematic, independent, and well-documented process for gathering evidence objectively and assessing it to determine the degree to which specific audit criteria are met. With the rapid development in the information sector, the concept of auditing has expanded beyond its traditional focus on accounting and finance to include an organisation's records and information management (RIM). Information, as a crucial asset, requires efficient management, particularly through RIM (Saffady 2021), leading to a growing interest in the practice of Information Audit (IA).

When applied to RIM, IA encompasses a set of actions taken by an organisation to verify the compliance of its RIM practices with established standards and objectives. The primary aim of IA is to ensure that the information managed by the organisation is of high quality and aligns with its strategic goals (Nurlatifah 2019b). IA involves assessing the management of information within an organisation, evaluating its alignment with organisational objectives, and verifying its effective functioning (Mazon-Fierro et al. 2023).

During the 1980s, IA methodologies predominantly focused on identifying information sources and creating inventories. However, technological advancements have drastically changed how information is produced, accessed, and utilised, prompting the evolution of IA into a more comprehensive analysis of information creation, access, and usage. Researchers such as Buchanan and Gibb (Buchanan and Gibb 2008), Henczel (Henczel 2001), and Orna (Orna 1999), introduced an IA approach centered on analysing organisations and mapping information flows, which provided deeper insights into the organisation's RIM system.

Despite the benefits IA offers to organisations, there remains a lack of standardised methodologies, unlike in financial auditing. Although the information profession, represented by fields such as information science and library studies, possesses the expertise in IA, consensus on its methodology is still lacking (Lateef and Omotayo 2019). This discrepancy is

partly due to variations in organisational structures, characteristics, and the environments in which they operate.

Recent research on IA advocates for the development of a new IA model tailored to document management within public institutions, integrating standards such as ISO27001 and ISO30301, along with relevant Ecuadorian laws (Mazon-Fierro et al. 2023). Likewise, an IA triangulation framework was proposed to comprehensively assess information, though the techniques presented in that study require further refinement for effective implementation within organisations (Nurlatifah 2019a).

This comprehensive literature review aims to trace the evolution of IA and highlight the absence of specific standards and methodologies in its application. Additionally, it seeks to explore the concept of investigation theory and the management of investigation records and information, while identifying the significant gap in research related to the Auditing of Investigation Records and Information (AIRI). The review concludes by proposing that existing IA frameworks can be adapted to develop a specialised AIRI framework.

## METHODOLOGY

This study adopts a qualitative research design, specifically utilising a comprehensive literature review to trace the evolution of IA frameworks and methodologies, identify gaps in existing research, and propose a specialised framework for the AIRI (Busetto, Wick, and Gumbinger 2020; Miles, Huberman, and Saldana 2019). A systematic approach was employed to search for relevant studies, frameworks, and methodologies related to IA and RIM. The search included peer-reviewed journal articles, conference papers, books, and official guidelines, covering both recent publications and foundational works in the field. Databases such as Scopus, Web of Science, IEEE Xplore, and Google Scholar were used to gather materials, using keywords like Information Audit, Records Management, Information Management, Investigation Records, Police Investigation, Law Enforcement Agency.

The inclusion criteria for this qualitative research focused on studies that examined the evolution, development, or application of IA frameworks, particularly in the context of RIM and investigation records and information (Flick 2022). Although priority was given to studies published within the last five years, foundational IA theories were also included to provide essential context. Given the limited recent research on this topic, seminal works by Buchanan and Gibb (Buchanan and Gibb 2008), Henczel (Henczel 2001), and Orna (Orna 1999), continue to be referenced, as they remain pivotal in IA-related research. Studies were excluded if they did not directly address IA or RIM, focused solely on unrelated financial audits, or were not available in English.

The selected literature was systematically reviewed and analysed using thematic analysis, a qualitative research method for identifying, analysing, and reporting patterns or themes within data (Creswell 2022). This flexible approach can be applied to various qualitative data sources, including interviews, document analysis, and field notes (Flick 2022). Key themes identified in this analysis included the evolution of IA, gaps in current methodologies, and the applicability of IA to investigation records and information. A comparative analysis was also conducted to evaluate the strengths and weaknesses of existing IA methodologies, particularly regarding their potential application to AIRI.

While the study offers significant insights into the evolution of IA frameworks and proposes a specialised AIRI framework, it is not without limitations. The reliance on available literature may result in the exclusion of unpublished studies or emerging research that could offer additional perspectives. Additionally, the qualitative nature of the research, while thorough, limits the ability to generalise the findings across all organisational contexts. The study also recognises the challenge in accessing comprehensive data from certain jurisdictions, which may affect the applicability of the proposed framework in those regions. Future research should consider these limitations and seek to include a broader range of data sources and empirical validation to strengthen the proposed AIRI framework.

## INFORMATION AUDIT

### *Definition of Information Audit*

The concept of IA is defined through various scholarly perspectives, each highlighting different aspects of its application within organisations. Frost and Choo (Frost and Choo 2017) define IA as encompassing all the methods and tools needed to catalogue, model, evaluate, quality-control, and analyse an organisation's information assets and RIM. This definition emphasises the comprehensive and systematic approach that IA employs to manage and optimise information assets, ensuring that every facet of RIM is thoroughly scrutinised for efficiency and effectiveness.

Lateef and Omotayo (Lateef and Omotayo 2019) offer a slightly different perspective, describing IA as an evaluation of an information environment to identify if there are gaps, duplication, and inefficiencies in the organisation. This definition positions IA as a diagnostic tool that primarily focuses on enhancing organisational efficiency by identifying and addressing operational weaknesses. By evaluating these inefficiencies, IA helps organisations streamline their processes and reduce redundancies.

Mazon-Fierro et al. (Mazon-Fierro et al. 2023) provide another angle, characterising IA as a general procedure that allows organisations to identify how information is managed within the institution, determine whether this information is necessary to meet its objectives, and ensure correct functionality. This definition underscores IA's role in aligning RIM practices with the broader strategic goals of the organisation, ensuring that the handling of information is not only efficient but also purposeful and aligned with the institution's objectives.

These definitions collectively illustrate that the auditing of records and information involves a meticulous review of processes and content to analyse, identify, and evaluate compliance and operational efficiency. The ultimate objective of IA is to implement improvements that not only ensure efficiency and compliance but also strategically align RIM practices with the organisation's overarching objectives.

### *Concept of Information Audit*

The implementation of IA offers substantial advantages to organisations, particularly in understanding how operational tasks align with and contribute to their strategic objectives (Smallwood 2019). IA serves as a powerful management tool, enhancing the effective utilisation of information assets to maximise efficiency and achieve strategic goals. Additionally, IA plays a pivotal role in strengthening RIM by ensuring that information practices are in sync with organisational objectives, leading to more effective management of information resources.

Sharma et al. (Sharma, Rana, and Nunkoo 2021) underscore the importance of robust RIM practices identified through IA as essential for mitigating risks, ensuring regulatory compliance, and enhancing overall strategic performance. The successful implementation of IA not only addresses existing gaps but also facilitates the development of comprehensive information policies. These policies are designed to rectify issues uncovered during audits and provide actionable recommendations for continuous improvement, thus fostering a more resilient and responsive organisational framework that is well-equipped to navigate the complexities of the modern information landscape.

Although there have been advancements in the field of IA studies, a gap remains in IA standards and guidelines. Discussions regarding IA often remain theoretical due to a lack of clarity among stakeholders and senior management regarding the specific information that auditors require to perform their duties. The integration of IA methods and applications with recent advancements in RIM studies has yet to occur (Frost and Choo 2017). Most IA methodologies lack robust measurement and evaluation techniques, highlighting the need for further research.

Three challenges that impact IA practices include inadequate guidance on scope management, ambiguous alignment with information technology scope, and the absence of standards for methodological approaches (Buchanan and Gibb 2008; Rigda 2021; Jatto 2021). While scholars have developed certain methodologies, this particular approach prioritises the flow of information over compliance and asset monitoring. Currently, there is no universally recognised approach endorsed by professional standards.

Despite the challenges related to standardisation and the understanding of its strategic importance, the significance of IA to an organisation should not be underestimated in terms of risk management and compliance. It is essential to provide ongoing education and establish new standards or modify existing ones to ensure consistency in terminology, including definitions, descriptions, and procedures.

This study has developed the concept of an IA that supports the maintenance of RIM. The implementation of IA is contingent upon adherence to the organisation's RIM policies and is integrated within the record and information lifecycle. IA plays a crucial role in helping the organisation achieve its goals by participating in the maintenance process of RIM, guided by the RIM policy as depicted in FIGURE 1.

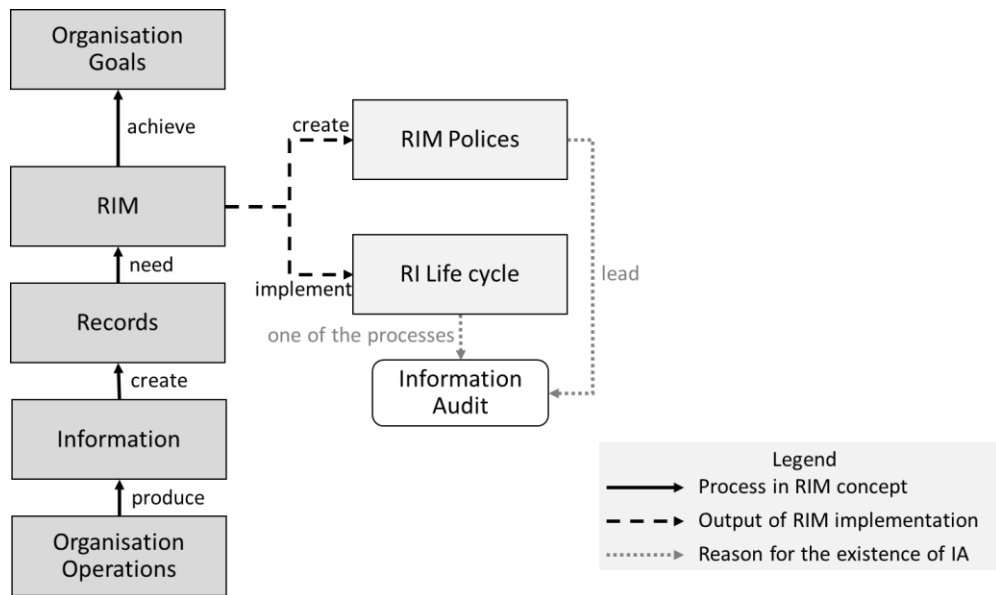


FIGURE 1. Information Audit in the concept of RIM

While definitions and concepts of Information Audit (IA) provide a foundational understanding (Buchanan and Gibb 2008; Frost and Choo 2017) they often assume generic organizational contexts and do not sufficiently address the specialized needs of auditing investigative records in law enforcement settings, where issues of evidentiary integrity, confidentiality, and procedural compliance are paramount (Walker and Katz 2022). This limitation reveals a theoretical gap in adapting existing IA frameworks to domains requiring rigorous evidentiary standards, legal admissibility, and heightened information security protocols, particularly in the management and auditing of investigative records (Lateef and Omotayo 2019).

#### *Principles of Auditing*

Unlike financial audits, IA lacks its own distinct principles and often incorporates general accounting principles instead. Auditing principles are crucial for enhancing audit effectiveness and reliability, supporting RIM by guiding organisations on necessary actions to achieve their objectives.

This study reviews the auditing principles from Guidelines for Auditing Management Systems ISO19011, the Code of Ethics for Professional Accountants (IFAC 2022), the Code of Professional Conduct (AICPA 2023), and the Code of Ethics and Conduct (ACCA 2022). It identifies eight key IA principles: integrity, competence, professionalism, confidentiality, independence, evidence-based practice, risk-based approach, and organisational support.

#### *Role of Information Audit in RIM*

IA plays a vital role in RIM by ensuring that an organisation's records and information operate efficiently and effectively. The following elements were developed and highlighted by scholars in their respective works (Kim 2022; Bukhsh and Nurlatifah 2019; Mazon-Fierro et al. 2023):

1. **Assessment of information requirements:** IA helps identify the types of records produced by organisations, assesses their information needs, and ensures that records are created and maintained to meet these requirements.

2. Records classification: Through IA, records can be classified based on their relevance, sensitivity, and retention requirements.
3. Compliance and regulatory checks: IA evaluates whether RIM practices within organisations comply with relevant laws, regulations, and industry standards. It helps identify gaps in compliance and enables organisations to take corrective action.
4. Risk assessment: By assessing the security and confidentiality aspects of RIM, IA helps identify potential risks and vulnerabilities, aiding in the implementation of appropriate controls to protect sensitive information from unauthorised access, loss, or theft.
5. Retention and disposal policy: IA can identify records that are no longer required for operational or legal compliance purposes. This process aids in developing retention and disposal policies, ensuring that records are kept for the necessary period or disposed of safely and promptly.
6. Training and knowledge: IA can uncover gaps in knowledge or understanding of RIM policies and procedures within the organisation and further guide training and awareness initiatives to enhance overall RIM practices.
7. Increasing efficiency and productivity: By streamlining RIM processes and optimising access to information, IA can lead to increased efficiency and productivity across the organisation.
8. Supporting decision-making: IA ensures that the right data is available to the right people at the right time, thereby improving the quality of the decision-making process.

#### *Skills as an Auditor*

Implementing an IA is widely recognised as crucial by many organisations; however, there remains a significant gap in education and training within this area. The complexity of IA requires a diverse range of skills that are rarely found in a single individual, making it essential to assemble a well-rounded audit team. This approach ensures that the various stages of IA are executed effectively, leveraging the collective expertise of the team members.

A structured approach to IA includes several key stages, each demanding specific skills (Henczel 2001; Orna 1999). In the planning stage, skills such as proposal writing, defining organisational scope, resource allocation, scheduling, and identifying existing knowledge are crucial. The data collection stage requires expertise in survey development, conducting interviews, and observation techniques. During the analysis phase, proficiency in selecting and using appropriate software, managing data, encoding information, and interpreting findings is necessary. Finally, the reporting stage relies on strong report writing and presentation skills to effectively communicate the audit's results.

These stages and their associated skill sets highlight the multidisciplinary nature of IA and underscore the importance of a collaborative approach to auditing within organisations.

#### *Basics of Investigation Theory*

Investigation is the act or process of carefully examining a crime, problem, or statement, particularly to uncover the truth. It involves a combination of tasks such as questioning, examination, research, detection, and the arrest of a criminal offence, along with the systematic and methodical gathering of all relevant evidence, in accordance with established rules and procedures.

The concept of investigation theory pertains to the methodology and systematic techniques employed in the investigation of crimes. Criminal investigation involves various methodologies for collecting and analysing evidence with the goal of uncovering information related to criminal activities. The key aspects of investigation theory (Osterburg, Ward, and Miller 2019; Turvey 2022; Mirakovits and Siegel 2021; Peak and Sousa 2021; LaFave and Wayne 2020; Israel et al. 2022) include:

1. Scientific method in investigation: This involves formulating questions or hypotheses, collecting data through observation and experiments, and drawing conclusions.
2. Development of conclusions: This refers to the formulation of logical assumptions based on the available evidence.
3. Reconstruction of crime scenes: A methodological process used to determine the sequence and interpretation of events surrounding criminal activity.
4. Crime profiling: Involves deducing characteristics of a criminal based on the nature of the crime, commonly used in serial crime investigations to predict the offender's future actions.
5. Geographical profiling: This involves analysing the location of a crime to draw conclusions about the offender's residence or base of operations.
6. Information theory: Relates to the formalisation and analysis of the quantification, storage, and transmission of information.

In law enforcement agencies, the duties and responsibilities of conducting investigations fall to the investigating officer. An officer is appointed and responsible for carrying out the investigation following the reporting of an incident. The conduct of investigations is governed by various laws across different jurisdictions (Walker and Katz 2022). This legal framework outlines the powers and responsibilities of parties, such as the police, in investigating criminal activity. Each investigation unit typically sets its own policies and procedures to guide investigation officers in their work.

The investigation process must be conducted according to established procedures and documented as investigation records and information. These records detail the findings of the investigation and serve as a written account of the entire process, which can be used in court as evidence or for review. In this study, these investigation records and information are referred to as the investigation paper.

#### *Management of Investigation Records and Information*

The management of investigation records and information involves several essential steps, including creation, organisation, review and approval, circulation, record management, and auditing, all of which must comply with relevant policies, standards, and legal requirements (Swanson et al. 2022; Ossian 2022).

1. Creation: The investigation must be documented as a record, capturing all critical details, including evidence collected, witnesses interviewed, and the investigation's progress.
2. Organisation: The investigation paper should be logically structured to facilitate clear understanding of the investigation's chronology.
3. Review and approval: Supervisors must review the investigation paper to ensure accuracy, completeness, and adherence to relevant policies, standards, and laws.



4. Circulation: The investigation paper should be distributed to supervisors and prosecutors as per the appropriate instructions.
5. Record management: The investigation paper must be securely stored within the records management system to ensure accessibility and compliance with confidentiality, security, and data preservation regulations.
6. Auditing: Periodic audits should be conducted to ensure the investigation paper is well managed and maintained in accordance with legal and policy requirements.

While the RIM practices related to these investigation papers may vary depending on jurisdiction, agency policies, and legal requirements, they must always adhere to established RIM policies and principles.

## ANALYSIS OF THE FRAMEWORK AND METHODOLOGY RELATED TO INFORMATION AUDIT

Previous research on IA frameworks and methodologies has provided organisations with tools for implementing IA. However, literature reviews on IA frameworks and methodologies do not specifically address AIRI, as no studies have developed a framework for AIRI implementation. This study analysed seven IA frameworks and methodologies deemed suitable as references for developing the AIRI framework.

### *Information Audit Methodology*

The IA Methodology was developed by Orna (Orna 1999) in response to the need for organisations to refer to relevant examples or case studies when planning an IA. Orna's methodology places significant emphasis on analysis, focusing on the identification of both information sources and information flows. Initially, Orna's IA methodology comprised four stages; however, it was later expanded to include 10 stages, incorporating both pre-audit and post-audit measures.

1. Analyse the information implications of the key business objectives.
2. Ensure support and resources from management.
3. Getting support from people in the organisation.
4. Plan an audit.
5. Finding out (execute audit).
6. Interpreting the findings.
7. Presenting the findings.
8. Implement changes.
9. Monitor effects.
10. Repeat the audit cycle.

Although Orna's methodology is known for its emphasis on the importance of organisational analysis and introducing information flow mapping, it lacks the practical tools and techniques required when carrying out some of the steps outlined.

### *Integrated Information Audit Methodology*

The Integrated IA Methodology was developed by Buchanan and Gibb (Buchanan and Gibb 2008) in response to the limited availability of IA methodologies and the need for a universal model applicable to most organisations. This methodology assumes that the organisation possesses some prior knowledge and may skip steps that have already been practised. The methodology comprises five main stages as follows:

1. Promote: Encourage support and cooperation for the implementation of IA.
2. Identify: Top-down strategic analysis followed by identification of information system resources and information flows.
3. Analyse: Analyse and evaluate the organisation's information resources and draw up an action plan to improve the problematic situation and achieve the objectives identified during the identification stage.
4. Account: Calculate the cost of the organisation's information resources so that the organisation can allocate the right costs to the relevant sources of information and services, compare costs with other values and benefits, and perform a cost analysis.
5. Synthesise: The purpose of this stage is to report on the IA processes that have been carried out and to synthesise findings and recommendations to provide an integrated strategic direction for the future management of information in the organisation.

The Integrated IA Methodology is designed for general, broad application, making it straightforward and easy to implement. However, organisations may need to adapt it by creating a tailored subset of measures to meet their specific needs.

#### *Seven-Stage Methodology*

The Seven-Stage Methodology, developed by Henczel (Henczel 2001), is a flexible and adaptable framework designed to meet the unique conditions and constraints of an organisation. The components of this model can be tailored to align with the organisation's resources and objectives. The seven stages are:

1. Planning: A critical stage, as effective planning can determine the success or failure of a project.
2. Data Collection: Involves gathering data necessary to meet the IA objectives, focusing on information sources that support the organisation's tasks and activities.
3. Data Analysis: Identifies gaps, overlaps, and inefficiencies in resource use.
4. Data Evaluation: Interprets and evaluates identified problems and opportunities within the organisation, often leading to enhanced information provision and quality.
5. Communicating Recommendations: Involves notifying the responsible parties of the proposed recommendations, typically through written reports and oral presentations.
6. Implementing Recommendations: After communicating the audit findings, a strategy is devised to implement the approved recommendations.
7. IA as a Continuum: The final stage involves revisiting the initial audit steps as part of a continuous process, ensuring the information environment is regularly reviewed and maintained.

This methodology's adaptability and continuous review process make it a valuable tool for organisations seeking to improve their RIM practices.

#### *Early Intervention System Framework*

The Early Intervention System (EIS) is a risk management tool that utilises performance indicators to identify police officers exhibiting questionable performance patterns (Walker and Archbold 2019). The EIS strategy monitors information to pinpoint officers whose current behaviour suggests a potential for serious issues in the future. By analysing police administration data, EIS serves as a proactive accountability mechanism, flagging officers who

may require intervention. This intervention aims to assist those officers and mitigate risks to individuals, organisations, and communities.

The EIS framework has evolved into a comprehensive accountability system, employing data-driven processes that, when correctly implemented, form a crucial element of supervision. Performance indicators within the EIS are used to analyse patterns in officers' performance, enabling the early detection of issues that may need to be addressed.

The primary benefit of EIS is its ability to track performance trends and prevent misconduct before serious incidents, such as public complaints, arise. EIS has been widely adopted as a tool for police accountability across the United States. It is an effective mechanism for enhancing accountability within law enforcement agencies through systematic performance reviews. Police management with experience using EIS report positive impacts on officer performance and strengthened supervision. The four key components of EIS are:

1. Performance indicators: Information on officers' activities, recorded in the EIS database.
2. Identification and selection process: A strategy to identify and select officers requiring a performance review and potential intervention.
3. Intervention: Developing counselling programmes or retraining for officers identified as having questionable performance.
4. Post-intervention monitoring: Supervisors are required to follow up on members' performance over a specified period.

The core function of EIS is to identify performance patterns using these indicators, providing supervisors with comprehensive information on officers' activities. EIS necessitates that supervisors analyse data, track behavioural trends, and make critical decisions about which officers require intervention.

This study's analysis found that, although EIS is widely used to monitor police performance, the framework does not specifically focus on the monitoring and auditing of investigation records and information managed by investigation officers. However, the use of performance indicators to identify issues in officer behaviour raises the question of which indicators could be applied to detect concerns in investigation records and information.

### *10-Step Methodology*

The 10-step methodology developed by Kusek and Rist (Kusek and Rist 2004) offers a comprehensive framework for establishing, developing, and maintaining outcome-based monitoring and evaluation systems. This approach aids policymakers and decision-makers in tracking progress and demonstrating the impact of specific projects, programmes, or policies. Unlike conventional monitoring and evaluation, which focuses on inputs and outputs, outcome-based monitoring and evaluation prioritises outcomes and impacts.

The monitoring and evaluation process is integrated into the lifecycle of a project or programme to enhance transparency and accountability within an organisation's operations. The 10-step methodology provides detailed guidance on building and maintaining an outcome-based monitoring and evaluation system:

1. Conducting a readiness assessment
2. Agreeing on outcomes to monitor and evaluate

3. Selecting key indicators to monitor outcomes
4. Establishing baseline data on indicators — assessing the current state
5. Planning for improvement — setting result targets
6. Monitoring for results
7. Determining the role of evaluations
8. Reporting findings
9. Applying findings
10. Sustaining the monitoring and evaluation system within the organisation

The 10-step methodology is utilised to monitor and evaluate projects, programmes, or policies. By using this model to build an outcome-based monitoring and evaluation system, organisations can achieve greater accountability, transparency, enhanced performance, and knowledge generation. While this methodology primarily focuses on monitoring and evaluation rather than auditing, it can be adapted for developing an AIRI strategy, particularly in the application of key indicators.

#### *Integrated Information Audit Framework for Electricity Companies (ElCIA)*

The ElCIA framework was developed by Drus and Shariff (Drus and Shariff 2008) to support electricity companies in conducting IA. It is a comprehensive IA framework designed to help these companies manage and utilise information resources efficiently. The ElCIA framework comprises eight elements that can be adapted by electricity companies to align with their specific environmental conditions.

This framework is structured with two outer layers: business strategy and information strategy. The outermost layer, business strategy, is designed to support the company's vision by defining its objectives and the means to achieve them. The second layer, information strategy, is intended to support the business strategy. The eight elements within this framework are: form, initiate, foster, execute, analyse, announce, reward, and review.

While ElCIA was initially developed as an IA framework specifically for the electricity sector, its versatility allows it to be customised and applied by other organisations. Its flexibility in adapting to changes in the business environment contributes to its broad applicability.

#### *Information Audit Triangulation Framework*

The IA Triangulation Framework, developed by Nurlatifah (Nurlatifah 2019a), is a comprehensive approach for conducting IA within organisations. The framework is divided into three main components: pre-audit, audit, and post-audit.

The pre-audit phase initiates the audit process by focusing on planning. The outcomes of this stage are critical, as they significantly influence the entire audit process, including the necessary data and methodologies to be used during the audit phase. This initial phase involves establishing an IA committee, defining the IA objectives and scope, formulating methodologies, setting time frames, and raising employee awareness of IA.

The audit component is central to this framework, as it is during this stage that the actual auditing takes place. The goal here is to assess RIM and analyse its progress towards achieving the organisation's goals. This stage includes the acquisition, processing, and verification of records and information, ensuring compliance with regulations, and maintaining the security and confidentiality of the acquired records and information.

The post-audit phase involves activities derived from the audit findings, including determining the appropriate course of action. This phase encompasses the presentation of findings, monitoring the implementation of recommendations, and promoting ongoing employee awareness of IA within the organisation.

Key inputs to the IA Triangulation Framework include company objectives, regulations, and documentation of current business processes. These inputs are analysed during the audit process, with the final output being a proposal for the organisation's management. Techniques within the framework can be tailored to suit the organisation's needs and the practitioner's expertise. However, Nurlatifah acknowledges certain limitations in the techniques described and offers the following suggestions:

1. Future research should explore additional techniques to aid practitioners in selecting the most effective methods for the IA process.
2. Seeking expert opinions adds value to the evaluation of the framework.

*Summary of the Analysis of the Framework and Methodology Related to Information Audit*

This study found that the frameworks and methodologies developed in related to IA possess strategic, resource-oriented, conceptual, and contextual characteristics, as identified through an analysis of previous studies. However, there is a notable lack of process-oriented frameworks or methodologies. The approaches in previous studies were shaped by the researchers' understanding, interpretation, perception, knowledge, and personal experience, resulting in varying methods depending on the specific problem addressed. These frameworks and methodologies were tailored to the unique contexts of IA, taking into account its challenges, needs, and evolution.

The study identified several key aspects in the frameworks and methodologies from previous research:

1. Employing a structured approach, whether bottom-up, top-down, or cyclical, when developing the framework.
2. Focusing on issues related to resources and information flows, including their identification and management.
3. Providing comprehensive tools and techniques for implementing IA.
4. Understanding the organisation to develop clear objectives aligned with its desired IA outcomes.
5. Constructing indicators to detect problems during IA implementation.
6. Categorising the audit process into three stages: before, during, and after the audit.
7. Maintaining IA as a continuous process.
8. Emphasising the principles of auditing within the framework or methodology.
9. Highlighting the theoretical aspects of RIM.

While the current frameworks and methodologies are generally effective, they may not be suitable for every situation. The lack of a universally accepted framework or methodology for IA limits its full implementation. Therefore, IA strategies should include adaptable frameworks or methodologies tailored to the organisational environment.

Although existing IA methodologies such as InfoMap (Buchanan and Gibb 2008) and the Seven-Stage Model (Henczel 2001) offer systematic approaches for auditing organizational information assets, they lack embedded mechanisms to assess procedural compliance,

evidentiary integrity, and investigative record reliability, the critical aspects in enforcement environments (Griffiths 2012; Lateef and Omotayo 2019). Considering the differences in work culture, organisational practices, and mandates that shape the development of approaches and strategies for implementing AIRI initiatives, this study adapts and refines the identified strategies. It addresses gaps in existing frameworks and methodologies to create a robust AIRI framework.

## THE CONCEPT THAT DETERMINES THE AIRI FRAMEWORK BASED ON PROFESSIONAL THEORY AND STANDARDS

The diverse concepts employed by previous researchers indicate a lack of consensus in defining the AIRI framework. This is largely because IA-related studies have tended to focus on the perceptions and interpretations of individual researchers. In determining the components and elements of AIRI, this study is guided by the following:

1. Relevant standard, ISO15489 for RIM, and ISO19011 for auditing management systems
2. Study of the assessment of the framework and methodology of IA by Drus and Shariff (Drus and Shariff 2007) from the disciplines of information systems management
3. Study of the IA methodology by Buchanan and Gibb (Buchanan and Gibb 2008) from the discipline of information management
4. Guideline by the Auditor General's Office of Canada (OAG 2020) for information sampling
5. Guideline by the Institute of Certified Internal Auditors (IIA 2020) for the collection and evaluation of information.
6. The concept of building performance indicators

### *Standard for Information and documentation – Records management (ISO15489)*

Organisations adopt ISO15489 to effectively manage records and documents by applying global standard principles and practices. This helps organisations comply with specific laws and regulations within their jurisdiction while adhering to world-class standards. ISO15489 is particularly prevalent in organisations handling sensitive information.

As the primary standard for information-content-oriented IA, ISO15489 is globally recognised for RIM. It provides a comprehensive framework for managing various types of organisational records and information. The standard includes essential concepts and principles crucial for developing effective RIM programmes. Although ISO15489 does not offer a complete IA framework or methodology, its guidelines have influenced the development of the AIRI framework in this study.

### *Standard for Auditing Management System (ISO19011)*

ISO19011 is a standard that provides guidelines for auditing management systems, covering the entire audit lifecycle from planning to evaluation. These guidelines are founded on seven

key auditing principles: integrity, fair presentation, due professional care, confidentiality, independence, evidence-based approach, and risk-based approach. They also include strategies for continuous improvement in audit implementation.

The selection of ISO19011 as a reference for this study is due to its broad applicability across various auditing programmes. However, it may need some adjustments to address specific competencies required for particular audits.

#### *IA Framework and Methodology Evaluation Review*

The study by Drus and Shariff (Drus and Shariff 2007) examines, analyses, and evaluates the framework and methodology of IA using three specific criteria: process, frequency, and post-implementation activities. The process criteria assess the clarity and completeness of the steps outlined in the IA framework or methodology. Frequency criteria indicate how often IA should be implemented by an organisation to ensure the validity and reliability of its findings and recommendations. Post-implementation activities involve the actions taken after the completion of the IA, including the monitoring mechanism for the implementation of proposals. The study also suggests that the audit process consists of three distinct stages: pre-audit, audit, and post-audit.

Buchanan and Gibb (Buchanan and Gibb 2008) introduce the concept of perspective in evaluating the framework and methodology of IA, thereby broadening its role and scope. This concept allows IA to encompass not only information sources but also the perspectives of the organisation. They present three key perspectives: strategic, process, and resource. Process perspectives, however, are not given as much importance in existing IA frameworks and methodologies compared to strategic and resource perspectives, leading to a gap in IA-related studies. The process perspective emphasises the dynamic relationship between information sources, information flows, tasks, and operational activities, rather than just the organisational structure. This perspective offers significant opportunities for achieving synergies and integration between related activities. The main outcome of IA from a process perspective is the analysis of information flows and related sources, with recommendations aimed at enhancing existing workflows through improved information support and management.

#### *Guidelines on Sampling and Gathering of Audit Information*

The AIRI initiative is guided by two key sources: the Office of the Auditor General of Canada (OAG) and the Chartered Institute of Internal Auditors (IIA). The OAG uses an audit methodology as a mandatory framework for auditors, particularly focusing on sampling and item selection for review, as detailed in Clause 4045 of the Evidence-Gathering Method (OAG 2020). This framework is employed in the AIRI initiative to establish audit targets.

The IIA's Policy and Research explores various internal audit methods that add value to modern organisations, including techniques for gathering and evaluating information (IIA 2020). These guidelines offer practical tools and methods for collecting and analysing information essential for auditing. For the AIRI initiative, relevant techniques include organisational participation,

involvement in operational processes, conducting interviews, listening techniques, analysis, and understanding what should be avoided during information collection.

### *The Concept of The Construction of Performance Indicators*

An indicator is a quantitative or qualitative variable that enables the measurement of progress in a project or programme towards achieving its goals (Kusek and Rist 2004). The use of indicators is common in supervisory programmes, including monitoring, evaluation, and auditing.

Progress or achievement in a project or operation can be measured by establishing specific indicators that serve as tools for monitoring, evaluating, and auditing. Indicators help to summarise complex data into a meaningful form, making them essential for measuring and tracking progress.

Setting indicators to measure input, activity, output, outcomes, and goals is crucial for providing the necessary feedback. This enables managers and auditors to determine whether an operation or project is meeting its expected results. By assessing performance indicators, managers or auditors can ascertain whether a project or programme is on track, deviating from its course, or even exceeding the targets set for performance.

### *Summary of The Concept that Determines the AIRI Framework Based on Professional Theory and Standards*

International standards such as ISO15489 and ISO19011 provide structured principles for auditing practices, including transparency, accountability, evidence-based evaluations, and continuous improvement. Complementary to these standards, guidelines on sampling and gathering of audit information from the Office of the Auditor General and the Institute of Internal Auditors stress the importance of systematic information gathering to ensure audit validity. In addition, the evaluation of IA frameworks and methodologies highlights the significance of clarity in process structure, implementation frequency, post-audit monitoring, and the need to adopt perspectives that integrate strategy, processes, and resources. These references collectively form a critical theoretical foundation for the conceptualisation of the AIRI framework.

However, while ISO15489 and ISO19011 establish essential audit principles and governance structures, their general frameworks require contextualisation to address the heightened sensitivities of auditing investigative records, particularly regarding chain-of-custody, procedural accuracy, and confidentiality in enforcement settings (Smallwood 2019). Similarly, while the guidelines on sampling and information collection from the OAG and IIA provide effective approaches for general audit processes, they do not specifically address the stringent evidentiary standards required in criminal investigations, where chain-of-custody and legal admissibility are paramount (Walker and Katz 2022). Evaluations of IA frameworks, although comprehensive for general organisational information management, primarily emphasise resource and strategy alignment and offer limited considerations for procedural compliance and forensic evidence handling essential in investigative environments (Frost and Choo 2017).



Therefore, the AIRI framework must expand beyond these existing standards and frameworks to address the operational, procedural, and evidentiary complexities uniquely encountered in law enforcement agencies.

## FINDINGS

The literature review reveals that IA has evolved significantly over the years, particularly in how it is applied within the context of RIM. The evolution of IA frameworks has led to the development of several methodologies that are adaptable to different organisational environments. However, a critical gap persists in the standardisation of IA practices, especially concerning the auditing of AIRI. Despite advancements, many IA methodologies remain resource-focused, lacking in robust compliance and evaluation techniques. The absence of universally recognized IA standards hinders the consistent application of IA across various sectors, particularly in law enforcement and investigation contexts. Moreover, there is a noticeable lack of research specifically addressing AIRI, which suggests that current IA frameworks are not fully equipped to handle the unique challenges posed by the auditing of investigation records and information.

## DISCUSSION

The review of existing literature reveals that, while IA has been effectively incorporated into various organisational frameworks, its specific application to investigation records and information remains largely underdeveloped. This oversight is particularly concerning given the sensitive nature of investigation records, which often involve critical legal and regulatory implications. Rigorous auditing of these records is essential to ensure that they comply with the stringent standards required in law enforcement and other related fields. The findings from this study highlight a pressing need for a specialised AIRI framework that can address the unique challenges faced by law enforcement agencies.

Recent efforts by researchers such as (Mazon-Fierro et al. 2023) and (Nurlatifah 2019a) have sought to update IA frameworks by integrating widely recognised standards like ISO27001 and ISO30301, which are highly relevant to document management in public institutions. While these modernisations represent significant progress, they still do not fully capture the intricacies associated with auditing investigation records and information. The complexities of managing such sensitive data, combined with the evolving legal landscape, demand a more tailored approach that these existing models do not yet provide.

Furthermore, the literature review uncovers a critical gap in the timeline of IA research. Most of the foundational studies and frameworks are more than five years old, suggesting that the field has not adequately evolved to meet the current demands of organisations, particularly in the context of RIM and AIRI. This stagnation poses a risk to organisations that rely on outdated methodologies, potentially leading to gaps in compliance and operational inefficiencies. The lack of recent advancements in IA methodologies also indicates that there is a significant opportunity for innovation in this area.

The application of IA in RIM has consistently been shown to improve organisational efficiency and ensure compliance with relevant standards. However, the review stresses the importance of developing IA frameworks that extend beyond resource management to include a strong emphasis on compliance. This is especially vital in the context of AIRI, where the stakes are considerably higher due to the potential legal repercussions of mishandling investigation records and information. The sensitive nature of these records, coupled with the legal obligations surrounding them, necessitates an IA framework that is both comprehensive and adaptable to the specific needs of law enforcement agencies.

While existing IA frameworks provide a solid foundation, they fall short in addressing the specific requirements of auditing investigation records and information. The findings from this study underscore the need for continued research and development to create an AIRI framework that is both robust and responsive to the dynamic challenges of the field. Such a framework would not only enhance organisational efficiency and compliance but also provide a critical safeguard against the legal risks associated with improper handling of investigative records. As the field of IA continues to evolve, it is imperative that future research focuses on bridging these gaps, ensuring that IA methodologies remain relevant and effective in the face of emerging challenges.

In addition to the critical review of the literature, preliminary empirical findings from a case study conducted with the Integrity and Standards Compliance Department (ISCD) of the Royal Malaysian Police (RMP) further reinforce the need for the development of an AIRI framework (Abd Kadir, Mokhtar, and Yusof 2024; 2025). The case study revealed several operational challenges, including the absence of a standardised auditing methodology, inconsistencies in compliance with audit procedures across different units, and limited follow-up mechanisms after audits, aligning with concerns highlighted by Frost and Choo (2017), Botha and Boon (2003), and Bukhsh and Nurlatifah (2019). These findings substantiate the shortcomings in current information audit models and reflect the broader issues in RIM and IA practices discussed by Buchanan and Gibb (2008) and Lateef and Omotayo (2019). Incorporating these real-world insights strengthens the justification for a specialised AIRI framework and validates the critical gaps identified through the literature review. Future research is expected to build on these findings by developing, piloting, and validating the AIRI framework in real-world investigative environments.

## CONCLUSION

In conclusion, the literature review highlights the critical need for a standardised framework for AIRI. While existing IA methodologies provide a foundation, they are insufficient for addressing the unique challenges associated with investigation records and information. The development of an AIRI framework should focus on integrating compliance and evaluation techniques that are tailored to the specific needs of law enforcement. Such a framework would not only ensure better management of investigation records and information but also enhance compliance with legal and regulatory requirements.

Future research should aim to bridge the identified gaps by developing a comprehensive AIRI framework that can be widely adopted across different sectors. This framework should be adaptable, allowing for customization based on the specific needs of the organisation, while also providing standardised procedures to ensure consistency and reliability in the auditing process. The integration of modern technologies and practices, as seen in recent IA models, will be crucial in achieving these goals and ensuring that the auditing of investigation records and information is both effective and efficient.

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