BANK OFFICERS' ROLE IN ANTI-MONEY LAUNDERING DETECTION: A BIBLIOMETRIC REVIEW

Fathimath Sharufa Mohamed[1], Nurhidayah Yahya[2*], Jamaliah Said[3]

[1]Accounting Research Institute, University Technology MARA, Malaysia
    sharu7000@gmail.com   https://orcid.org/0009-0008-1993-0300
[2]Accounting Research Institute, University Technology MARA, Malaysia
    nurhidayahyahya@uitm.edu.my   https://orcid.org/0000-0001-7251-1932
[3]Accounting Research Institute, University Technology MARA, Malaysia
    jamaliah533@uitm.edu.my   https://orcid.org/0000-0003-1912-2529
*Corresponding Author

Article Info:

Abstract:

A significant concern about bank officers' role in anti-money laundering detection is their limited effectiveness in identifying and reporting suspicious activities, stemming from inadequate training, high workloads, fear of retaliation, overreliance on technology, cognitive biases, inconsistent regulatory compliance, and lack of collaboration, all of which undermine the overall success of AML efforts. Thus, this paper provides a review of bank officers' roles in anti-money laundering detection from a bibliometric perspective, analysing the Scopus publication database. To guide further research in this area, article titles containing keywords such as "Bank Officers' Role" OR "Bank Sector" AND "Anti-Money Laundering" OR "Money Laundering" AND "Detection Strategies" OR "AML Detection" OR "Detect" were selected from the database. Following the selection, bibliometric and citation analyses were performed on these documents. Frequency analysis was performed using Microsoft Excel, citation metrics were assessed with Herzing's Publish or Perish, and data visualisations were achieved through VOS Viewer. The bibliometric study shows a significant increase in research on the role of bank officers in AML detection from 2008 to 2025, fueled by advancements in AI and machine learning. It emphasises overall collaboration, with key contributions from the U.K., U.S., Australia, Malaysia, and Germany. Policy recommendations include promoting technological innovation, fostering international cooperation, strengthening regulatory frameworks, and supporting interdisciplinary research to enhance AML efforts and combat financial crime. The research is confined to the Scopus database and the specific keywords used for the search.

48

Nevertheless, the study has initiated a bibliometric analysis of the vital research area of bank officers' role in anti-money laundering detection.

Introduction

Money laundering is an international problem posing a threat to the stability of the economy, national security, and financial system integrity because of the ability to conceal the sources of illegally obtained funds and allow criminals to gain profit out of illegal operations (UNODC, 2021). The amount of money is big: the researchers of the United Nations Office on Drugs and Crime may estimate that between 2 and 5 percent of world GDP (some 800 billion to 2 trillion) is laundered each year (UNODC, 2021). In recent evaluations, it is noted that the risks of laundering are increasing due to the increasing digital payment platforms and virtual resources (Khan et al., 2025), undermining the confidence of financial institutions and promoting organised crimes, corruption, and terrorism (Europol, 2023).

Bank officers serve in a frontline position in terms of detection and prevention of money laundering, and they have the duty of identifying suspicious transactions, reporting and ensuring that they are compliant with the regulations of anti-money laundering (AML). The performance of bank officers is determined by several factors, which are closely connected and in particular human factors (training, workload, cognitive biases, fear of retaliation), technology adoption (transaction monitoring system, analytics, virtual-asset tools), organizational behavior (policies, resourcing, interdepartmental collaboration), and the regulatory environment (differences in the national application of international AML standards) (Labanca et al., 2022; Theodorsson, 2025; FATF, 2021). Although such problems are often addressed in the AML literature, bibliometric support is required to define their comparative importance and presentation in the published studies.

This bibliometric review thus limits the discussion to understand how the literature defines the role of the bank officers in AML detection with special concern on the two interrelated areas: the human and organizational factors that contribute to the front-line decision making and the

adoption of technology and its interdependence with the former human factors. With the matching of the review with these domains, the study will aim to map the trends in the field, detect high impact studies and contributors, and display predominant themes and keywords which are specifically relevant to the frontline bank personnel and the socio technical contexts within which they are engaged (Interpol, 2022).

Given these challenges, there is an urgent need to understand and enhance the role of bank officers in AML detection. This bibliometric review aims to explore the evolving role of bank officers in AML detection by addressing four key questions: Question 1: What does current research reveal about the role of bank officers in AML detection? Question 2: Which studies in this field have had the most significant impact? Question 3: Who are the leading contributors to the field of AML detection, and what is the role of bank officers? Question 4: What are the predominant themes and keywords in this area of research?

By answering these questions, this study seeks to provide a comprehensive overview of the existing literature, identify research gaps, and offer insights into strengthening the role of bank officers in combating money laundering. The rest of the paper is structured as follows: Section 2 reviews the literature, Section 3 explains the methodology, Section 4 presents the findings, and Section 5 discusses the implications and conclusions.

Literature Review

Money laundering is a complex procedure involving the conversion of illicit money also known as dirty money into valid assets. It is normally characterized by three steps namely: placement, layering, and integration. Placement puts illicit money into the financial system, lays off its source by using complex transactions, and integration makes it enter the economy once again as legitimate assets (Leong, 2016). Money laundering is a complicated and international phenomenon because it may operate across different jurisdictions and may entail a plethora of financial instruments.

The dirty money inserted into these procedures is the result of diverse criminal activities such as drug trade, human trade, credit card frauds, embezzlement, insider trading, bribery, theft, and tax evasion (Gao and Xu, 2009). The variety of such activities highlights the thousands of colors of money laundering and its extensive impacts on the economy and society.

The development in technology in the past few years has made combating money laundering difficult, as well as helped it. Cryptocurrencies, digital payment systems, and blockchain are some of the tools that the criminals have used to cover their tracks (Labanca et al., 2022). However, financial institutions and regulators have begun to seek to improve their AML practices by adopting artificial intelligence (AI) and machine learning (ML). Such technologies are capable of processing large volumes of data on the transactions in real time and identify trends and abnormalities, which can be used to signal suspicious behavior (Rouhollahi, 2021). The combination of these technologies with AML processes can be viewed through the prism of the technology acceptance model (e.g., Davis, 1989) and theories of human-machine interaction, where the perceived usefulness, ease of use, and trust in automated systems are the primary factors that can predict how the bank officers will accept and successfully use AI/ML tools. Moreover, the organizational risk management models, including the ISO 31000 risk management principles (ISO, 2018), can be used to give a theoretical framework of how

institutions can balance technological investments with human management of the financial crime risks.

Technology in itself, however, is not a panacea. The human factor is still irreplaceable in the AML detection. Bank representatives also have an important role in the interpretation of the results of automated systems, in-depth research, and informed decision-making regarding reporting suspicious activities (Yusoff et al., 2023). Their experience and discretion are needed in overcoming the weakness of technology and acclimating to the continuously changing strategies of money launderers. This interaction of the human judgment and technological support is consistent with the socio technical system theory (Trist and Bamforth, 1951) that focuses on the interconnectedness between the social and technical elements in attaining organizational goals.

Theories of compliance behavior, including the theory of planned behavior (Ajzen, 1991) and the regulatory focus theory (Higgins, 1997), also explain how individual motivation, perceived norms, and organizational culture affect the willingness of bank officers to report any suspicious transactions and follow AML procedures, which is why the effectiveness of bank officers in this role is affected by them as well. Although these theoretical findings do exist, there are still some major challenges. The absence of dimensions of determining suspicious transactions and the complexity of laundering schemes creates a daunting challenge to go on detecting it (Al-Suwaidi and Nobanee, 2021). Moreover, the international character of financial crime makes bank officers to work in the multifaceted network of international laws and cooperation schemes that are not always consistently implemented in different jurisdictions (FATF, 2021).

This review demonstrates the importance of the bank officers in the AML detection and implies the necessity of further research to make them even more effective. Through the analysis of the existing research condition using the established theoretical frameworks, including compliance behavior, organizational risk management, and technology acceptance this research will go beyond the description and attempt to present a concept-based analysis of the emerging future of AML detection. This would be more interpretively rewarding and discover ways of strategies required to protect financial systems worldwide.

Methodology

Relevant data used in this article were sought in the Scopus on May 9, 2024. The search strategy has been narrowed down to the use of the following combination of a keyword in consistent use of Boolean operators: ("Bank Officers Role" OR bank sector OR bank officers or aml officers or money laundering) and anti-money laundering or money laundering and (detection strategies or aml detection or detect or suspicious transaction reporting or kyc). The narrowed search strategy makes it accurate since it will combine synonyms using OR operators and core themes using AND operators. These terms were included because the scope of the search was necessary to obtain a wider range of literature addressing the role of bank officers in AML detection strategies, and these terms did not provide an unreasonable measure of ambiguity.

To reduce the level of bias and increase the relevance, the search was not confined to the article titles only but was expanded to the abstracts and keywords because, in this way, it would be possible to find the documents in which major concepts could be used in the contextual discussion. There were no limitations placed on the publication date (2008-2025) or topic in

order to get the most optimal results. The search yielded 63 useful retrievals. The process of this search is presented in the flowchart in Figure 1. Bibliometric analysis was conducted with the help of VOSviewer and citation metrics and other frequencies were collected with the help of the Publish or Perish software developed by Harzing. Through Microsoft Excel, some calculations and graphs were created.
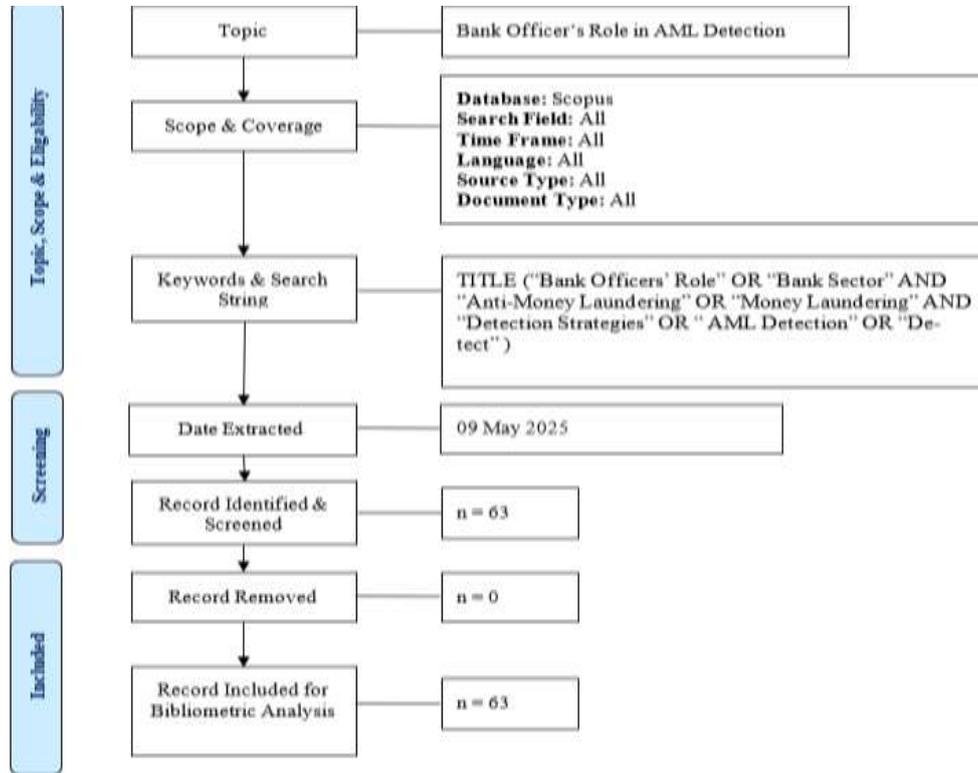
Figure 1: Flow Diagram of The Search Strategy
Source: (Zakaria et al., 2021)

Results

The bibliometric analysis conducted in this study systematically evaluated various dimensions of the literature, including publication year, authorship, subject area, document type, title, author-selected keywords, institutional affiliations, country of origin, source type, and language. Furthermore, citation metrics and frequencies were computed to elucidate prevailing citation patterns within the dataset. The findings are presented both quantitatively and visually through graphical representations to facilitate comprehensive interpretation.

Document Types

Drawing on data extracted from the Scopus database, the study conducted an analysis of document types pertaining to 63 research topics. As illustrated in Table 1, the distribution of document types is as follows: articles constitute the majority, accounting for 30 documents (47.62%), followed by books with 23 documents (36.51%). Book chapters and reviews represent smaller proportions, comprising six documents (9.52%) and four documents (6.35%), respectively.

Table 1: Document Type

| Document Type	Total Publications (TP)	Percentage (%)
Article	30	47.62
Book	23	36.51
Book chapter	6	9.52
Review	4	6.35
Total	**63**	**100**

Table 2 delineates the linguistic composition of the documents analysed in this study, focusing on the role of bank officers in anti-money laundering detection. The findings reveal that the corpus of literature pertaining to this research topic is exclusively monolingual, with all 63 documents (100%) composed in English. This uniformity in language underscores the predominant use of English as the medium of scholarly communication within the examined domain, reflecting its global significance in discussions on anti-money laundering practices and the responsibilities of bank officers.

Table 2: Languages

Language	Total Publications (TP)*	Percentage (%)
English	63	100
Total	**63**	**100**

Research Trends

Figure 2 illustrates the publication and citation trends related to the role of bank officers in anti-money laundering detection. The data reveal that the first scholarly contribution in this field was published in 2008, titled "The disruption of international organised crime: An analysis of legal and non-legal strategies" by Leong, Angela Veng Mei. A significant milestone was achieved in 2024, when the annual publication count surpassed a two-digit figure for the first time. Additionally, the year 2021 marked the peak in citations, with a total of 121 citations recorded. The table below offers a comprehensive annual breakdown of publication counts and cumulative citations, collectively illustrating the temporal evolution of scholarly output and its impact, as measured by citations, within this critical area of research.
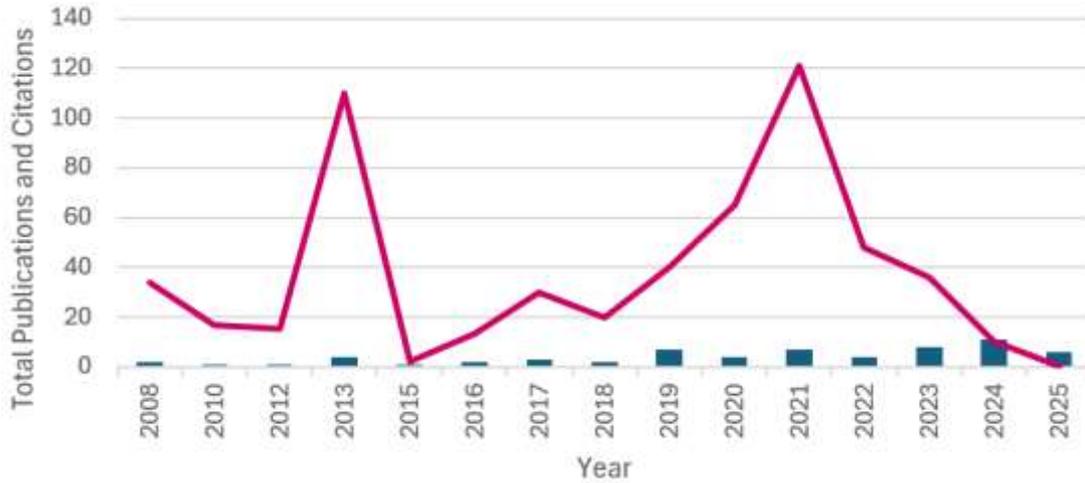
Figure 2: Total Publications and Citations by Year

Table 3 and Figure 3 present the leading countries contributing to the scholarly output on the research topic. The United Kingdom emerges as the foremost contributor, accounting for 24 publications (38.10%), followed closely by the United States with 18 publications (28.57%). Australia, Malaysia, and Germany also make significant contributions, with 9 (14.29%), 7 (11.11%), and 5 (7.94%) publications, respectively. This distribution underscores global engagement and varying levels of academic participation in this field of study.

Table 3: The Top 5 Countries Contributed to the Publications

Country	Total Publications	*Percentage*
United Kingdom	24	38.10%
United States	18	28.57%
Australia	9	14.29%
Malaysia	7	11.11%
Germany	5	7.94%
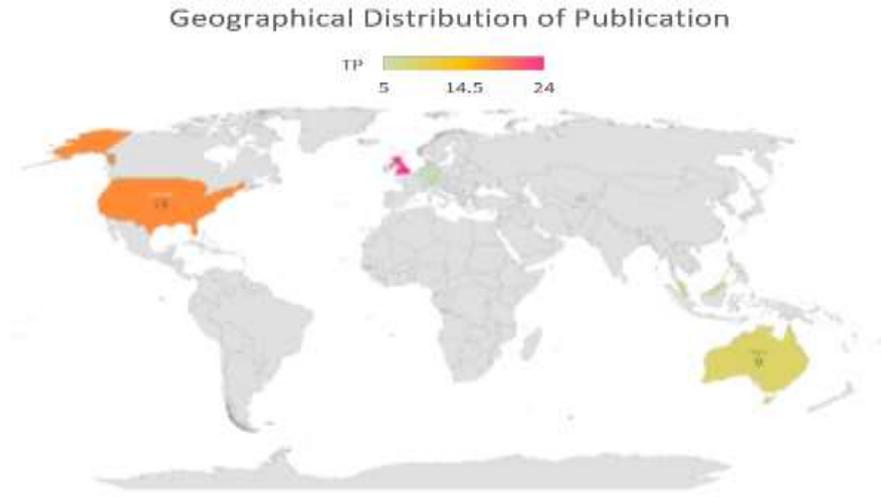
Figure 3: Geographical Distribution of Publications

Citation Analysis

A citation analysis was conducted to assess the scholarly impact of publications focusing on the role of bank officers in anti-money laundering detection. Utilising Herzing's Publish and Perish, citation metrics were calculated, and a network visualisation was generated using VOS Viewer. Data retrieved from the Scopus database on May 9, 2025, identified a total of 63 documents that collectively garnered 561 citations. As presented in Table 4, the analysis reveals an annual average of 33 citations and a mean of 8.9 citations per document over the 17 years from 2008 to 2025. These metrics provide insights into the influence and dissemination of research in this domain.

Table 4: Citations Metrics

Metrics	Data
Papers	63
Number of Citations	561
Years	17
Citations per Year	33
Citations per Paper	8.9
Cites_Author	368.05
Papers_Author	39.27
Authors_Paper	2.32
h_index	14
g_index	22

Table 5 shows that Preuss and Königsgruber (2021) and Alkhalili et al. (2021) jointly lead the table with the highest citations, each garnering 55 citations, reflecting their significant impact in their respective fields. The oldest study in the dataset, authored by Wilmarth Jr. (2013), remains influential with 50 citations, demonstrating its enduring relevance. Conversely, the most recent contribution by Shahbazi and Byun (2022), with 34 citations, highlights emerging scholarly interest.

Table 5: Top 5 Highly Cited Articles

No.	Authors	Title	Year	Cites
1	Preuss S.; Königsgruber R.	How do corporate political connections influence financial reporting? A synthesis of the literature	2021	55
2	Alkhalili M.; Qutqut M.H.; Almasalha F.	Investigation of Applying Machine Learning for Watch-List Filtering in Anti-Money Laundering	2021	55
3	Wilmarth Jr. A.E.	Turning a blind eye: Why Washington keeps giving in to Wall Street	2013	50
4	Brooks G.; Aleem A.; Button M.	Fraud, corruption and sport	2013	46
5	Teichmann F.	Recent trends in money laundering	2020	34
6	Shahbazi Z.; Byun Y.-C.	Machine Learning-Based Analysis of Cryptocurrency Market Financial Risk Management	2022	34
7	Mazerolle L.; Eggins E.; Cherney A.; Hine L.; Higginson A.; Belton E.	Police programmes that seek to increase community connectedness for reducing violent extremism behaviour, attitudes and beliefs	2020	20

Figure 4 presents a visual mapping of citation networks among cited authors, employing a minimum citation threshold of one per author and a minimum document count of one per author. A total of 87 authors met these criteria, as illustrated in the figure. Notably, Mat-Isa, Y. and Mohd-Sanusi, Z. exhibit the highest link strength and citation counts, indicating their significant influence and centrality within the scholarly network.
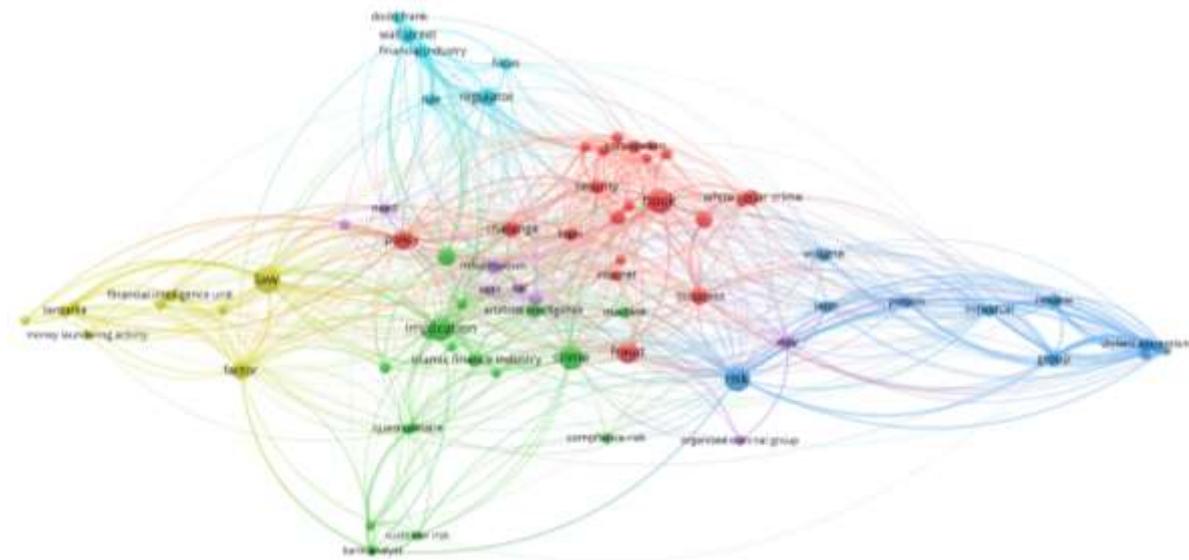
Figure 4: Network Visualisation of Citation Note: Authors; Counting Methods: Full Counting. Minimum Number of Documents of An Author: 1, Minimum Number Of Citations of An Author: 1.

Figure 5 displays the visual map of co-citation among cited authors, within a minimum citation threshold of 5 per author. A total of 278 authors met this citation, as shown in Figure 3. Gottschalk P. is the author with the strongest link.

Figure 5: Network Visualisation of Co-Citation Note: Authors; Counting Methods: Full Counting; Minimum Number of Counting of An Author = 5.

Keywords

Table 6 highlights the top 10 author keywords with over five occurrences, dominated by "Fraud" (61 publications, 96.83%), followed by "Law" (35, 55.56%) and "Book" (32, 50.79%). Other significant keywords include Risk (31, 49.21%), Crime (30, 47.62%), Implication (29, 46.03%), Policy (23, 36.51%), Regulator (19, 30.16%), Factor (17, 26.98%), and Financial Institution (17, 26.98%). This table reflects the key thematic focus of the research

Table 6. Top 10 Keywords (With More Than Five Occurrences)

Author Keywords	Total Publications (TP)	Percentage (%)
Fraud	61	96.83%
Law	35	55.56%
Book	32	50.79
Risk	31	49.21
Crime	30	47.62%
Implication	29	46.03%
Policy	23	36.51
Regulator	19	30.16%
Factor	17	26.98%
Financial Institution	17	26.98%

Figure 6 illustrates the network map of keyword co-occurrence, employing a colour-coded visualisation to delineate thematic connections. The blue lines signify the keyword "risk," while the yellow lines denote "law." Additionally, the red lines represent "hook," the green lines reflect "implications," and the ice blue lines correspond to "regulator." This visual representation highlights the interrelationships and thematic clusters among the keywords, providing insights into the dominant conceptual frameworks within the research domain. Notably, the absence of direct strong links to specific technology keywords suggests that in this literature, technological tools are primarily discussed in terms of their implications for risk and regulation, rather than as standalone themes.

Figure 6: Network Visualisation of The Co-Occurrence Keywords. Note: Full Counting, Title and Abstract Field, Minimum Number of Occurrences of a Term= 5

Discussion and Conclusion

This paper presents a detailed bibliometric review of the scholarly landscape concerning the role of bank officers in anti-money laundering (AML) detection, addressing four central research questions. The analysis reveals a marked increase in publications from 2021 onward, indicative of growing global interest in leveraging advanced methodologies and technologies to combat financial crimes. Leading contributions from the United Kingdom, United States, Australia, Malaysia, and Germany underscore the international collaboration driving this critical field of study.

The citation analysis highlights the scholarly impact of key works, with Preuss and Königsgruber (2021) and Alkhalili et al. (2021) each amassing 55 citations, signifying their foundational role in shaping the discourse on AML detection. The enduring relevance of Wilmarth Jr.'s (2013) study, with 50 citations, further illustrates the evolution of research in this domain and the lasting influence of seminal contributions.

Network visualisations identify Mat-Isa, Y. and Mohd-Sanusi, Z. as central figures in the citation network. At the same time, Gottschalk, P. emerges prominently in co-citation analysis, underscoring their significant influence on the research community. These authors have been instrumental in advancing knowledge and fostering interdisciplinary collaboration in the detection of AML.

Keyword analysis reveals that 'Fraud, Law, and Book' dominate the research landscape, reflecting a strong emphasis on the legal and procedural dimensions of AML efforts. Additional keywords such as Risk, Crime, and Implication highlight the multifaceted nature of AML detection. At the same time, Policymakers, Regulators, and Financial Institutions underscore the critical role of regulatory frameworks and institutional responsibilities. The thematic clusters identified through co-occurrence analysis offer valuable insights into the dominant conceptual frameworks that guide this research.

This study contributes to the existing body of knowledge by offering a systematic bibliometric analysis of the role of bank officers in AML detection. It delineates key trends, influential works, and leading contributors, providing valuable insights for academics, policymakers, and practitioners. The findings also identify gaps in interdisciplinary research that integrate perspectives from finance, criminology, and information technology, as well as the need for studies examining geographical and cultural variations in AML practices. Longitudinal research, which tracks the evolution and efficacy of detection strategies over time, is crucial for refining and enhancing these approaches.

However, this study is limited by its reliance on the Scopus database and specific keywords, which may exclude relevant publications from other sources. Future research could expand the scope by incorporating additional databases, employing diverse methodological approaches, and exploring alternative keyword combinations. A more comprehensive literature review and in-depth analysis could further enrich the understanding of this critical area, ultimately strengthening global efforts to combat money laundering and financial crime.

References

Ajzen, I. (1991). The theory of planned behavior. Organizational Behavior and Human Decision Processes, 50(2), 179–211. https://doi.org/10.1016/0749-5978(91)90020-T

Al-Suwaidi, N., & Nobanee, H. (2021). Anti-money laundering and counter-terrorism financing: A bibliometric analysis. Journal of Financial Crime, 28(2), 123–145. https://doi.org/10.1108/JFC-09-2020-0185

Al-Suwaidi, N., & Nobanee, H. (2021). Anti-money laundering: A bibliometric review and future research directions. Journal of Financial Crime, 28(3), 789-805. https://doi.org/10.1108/JFC-10-2020-0210

BML. (2023). Money laundering: A global threat. Retrieved from https://www.bml.org

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly, 13(3), 319–340. https://doi.org/10.2307/249008

Europol. (2023). European Union Serious and Organised Crime Threat Assessment (SOCTA) 2023. Retrieved from https://www.europol.europa.eu

Financial Action Task Force (FATF). (2021). International standards on combating money laundering and the financing of terrorism & proliferation. Retrieved from https://www.fatf-gafi.org

Gao, S., & Xu, D. (2009). Conceptual modeling and development of an intelligent agent-assisted decision support system for anti-money laundering. Expert Systems with Applications, 36(2), 1493–1504. https://doi.org/10.1016/j.eswa.2008.02.020

He, P. (2010). A typological study on money laundering. Journal of Money Laundering Control, 13(1), 15–32. https://doi.org/10.1108/13685201011010190

He, P. (2010). Money laundering and its prevention in China. Journal of Money Laundering Control, 13(1), 15-31. https://doi.org/10.1108/13685201011010162

Higgins, E. T. (1997). Beyond pleasure and pain. American Psychologist, 52(12), 1280–1300. https://doi.org/10.1037/0003-066X.52.12.1280

Interpol. (2022). Global Financial Crime Report 2022. Retrieved from https://www.interpol.int

ISO. (2018). ISO 31000:2018 Risk management—Guidelines. International Organization for Standardization. https://www.iso.org/standard/65694.html

Khan, A., Jillani, M. A. H. S., Ullah, M. & Khan, M. (2025). Regulatory strategies for combatting money laundering in the era of digital trade. Journal of Money Laundering Control, 28(2), 408-423.

Labanca, C., Bertolini, A., & Choo, K.-K. R. (2022). Challenges in detecting money laundering: A systematic review. Journal of Financial Regulation and Compliance, 30(1), 45–67. https://doi.org/10.1108/JFRC-05-2021-0037

Labanca, C., Mazzilli, S., & Riccardi, M. (2022). The use of cryptocurrencies in money laundering: A systematic literature review. Journal of Financial Crime, 29(2), 512-528. https://doi.org/10.1108/JFC-06-2021-0132

Leong, A. V. M. (2016). The disruption of international organised crime: An analysis of legal and non-legal strategies. Routledge.

Leong, A. V. M. (2016). The global anti-money laundering regulatory landscape: Challenges and opportunities. Journal of Financial Regulation and Compliance, 24(3), 234-249. https://doi.org/10.1108/JFRC-10-2015-0050

Rider, B., Alexander, K., & Bazley, S. (2016). Market abuse and insider dealing (3rd ed.). Routledge.

Rouhollahi, M. (2021). The role of artificial intelligence in anti-money laundering: A systematic review. Journal of Financial Technology, 5(3), 234–250. https://doi.org/10.1016/j.jfitech.2021.03.005

Theodorsson, U. (2025). The Dual Pressure of Regulatory Compliance and Technological Innovation in Talent Management: A Study in the Banking Sector. Beta, 39(1), 1-17.

Trist, E. L., & Bamforth, K. W. (1951). Some social and psychological consequences of the longwall method of coal-getting. Human Relations, 4(1), 3–38. https://doi.org/10.1177/001872675100400101

United Nations Office on Drugs and Crime (UNODC). (2021). Global money laundering estimates. Retrieved from https://www.unodc.org

Yusoff, R., Ahmad, N., & Ismail, S. (2023). The role of bank officers in anti-money laundering: Challenges and opportunities. Journal of Financial Crime, 30(4), 567–582. https://doi.org/10.1108/JFC-12-2022-0301

Zakaria, R., Ahmi, A., Ahmad, A. H., & Othman, Z. (2020). Worldwide melatonin research: A bibliometric analysis of the published literature between 2015 and 2019. Chronobiology International. https://doi.org/10.1080/07420528.2020.1838534