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THE ROLE OF WHISTLEBLOWING SYSTEMS IN MITIGATING PUBLIC SECTOR FRAUD: A SYSTEMATIC LITERATURE REVIEW

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Abstract

Fraud in the public sector remains a serious challenge that threatens clean and responsible governance. This study aims to examine in depth the contribution of the *whistleblowing system* in reducing fraudulent practices in government agencies through a *systematic literature review* (SLR) approach. The literature search process is carried out through a number of scientific databases, namely Google Scholar, Scopus, and SINTA, with a publication range between 2021 and 2025. Of the 308 articles that were successfully identified in the initial stage, as many as 10 articles were determined as final samples after going through a strict selection procedure based on *the Preferred Reporting Items for Systematic Reviews and Meta-Analyses* (PRISMA) protocol. The results of the synthesis show that *the whistleblowing system* has been proven to have a positive impact on early detection and fraud prevention, as well as playing a role in building a climate of organizational transparency. The effectiveness of this system is greatly influenced by the commitment of the leadership, the maturity of the regulatory framework, the capacity of human resources, the sense of *psychological safety*, and the availability of adequate reporting technology infrastructure. The findings also indicate that there are still a number of research gaps that need to be followed up, especially regarding collaboration between supervisory agencies and the management of digital *whistleblower* reputations.

Keywords: *Whistleblowing System*, Fraud Mitigation, Public Sector, Governance, *Systematic Literature Review*

INTRODUCTION

Clean and accountable public sector governance is the main foundation in realizing public trust in government institutions. However, the phenomenon *Fraud* Or fraud in the public sector is still a systemic problem that is difficult to eradicate completely. Various shapes *Fraud* Such as corruption, abuse of authority, and manipulation of financial statements continue to eat away at state resources that should be allocated for the welfare of the community. In this context, the urgency of developing prevention and early detection mechanisms *Fraud* It is becoming increasingly critical to be dealt with in a comprehensive and structured manner. According to Azizah & Erinos (2022), the weak internal supervision system in public institutions is one of the main factors that fertilize fraudulent practices, so additional instruments are needed that are able to reach loopholes that are not reached by conventional audit mechanisms. In line with this, Ulum & Suryatimur (2022) confirms that the level *Fraud* in the public sector tends to be higher than the private sector due to low transparency and accountability in the management of the state budget.

One of the instruments that is gaining increasing attention in the forensic accounting and governance literature is *Whistleblowing System*, which is a violation reporting mechanism that allows individuals—both from inside and outside the organization—to report suspected fraud safely and securely. *Whistleblowing system* is believed to be one of the most effective tools in detecting and preventing *Fraud* Because it utilizes information from parties who have direct access to fraudulent practices in the field. Fathoni et al. (2024) found that the implementation *Whistleblowing System* that is effective in significantly increasing the early detection of fraud, especially when accompanied by a guarantee of protection for whistleblowers (*Whistleblower Protection*). Furthermore, Paraswansa & Utomo (2024) highlight that the success of this system is highly dependent on the organization's commitment to ensuring the anonymity and security of whistleblowers from various potential threats *Retaliation* or retaliation.

Although *Whistleblowing System* has been formally regulated in various regulations in many countries, including Indonesia through a number of related laws and regulations, its implementation on the ground still faces various structural and cultural challenges that cannot be ignored. An organizational culture that tends to cover up mistakes (*Cover-up culture*), the lack of understanding of employees about the reporting mechanism, as well as distrust of the existing legal system are real obstacles in optimizing the function of *Whistleblowing*. Pramudyastuti et al. (2021) reveals that the low utilization rate *Whistleblowing System* in Indonesian government agencies is caused by the perception of employees who still doubt the effectiveness of the follow-up to the reports submitted. This is reinforced by the findings Fajrianti et al. (2025) which states that the internalization of integrity values in organizational culture is an absolute prerequisite for *Whistleblowing System* can function optimally as a mitigation instrument *Fraud*.

Systematic literature review (*Systematic Literature Review*) on this topic has become very relevant considering the growing number of related *Whistleblowing* and *Fraud* in the public sector in the last decade. Approach *systematic review* allows the synthesis of empirical findings from a variety of geographical and institutional contexts methodologically and structurally, resulting in a more comprehensive and evidence-based understanding (*Evidence-Based*). By critically examining the development of the literature, this study seeks to identify knowledge gaps (*Research gap*) and provide direction for further research that is more contextual and applicative in an effort to strengthen public sector governance. Manurung et al. (2025) emphasizing the importance of the *systematic review* in the field of public sector accounting to produce policy recommendations that are more accurate and scientifically accountable.

Based on the background that has been described, this study formulates the following main problems: (1) What is the role of *the whistleblowing system* in mitigating *fraud* in the public sector based on a systematic literature review? (2) What factors affect the effectiveness of the implementation of *the whistleblowing system* in the context of public sector organizations? (3) What are the research *gaps* identified in the existing literature and what is the recommended direction of further research? This study aims to: (1) analyze and synthesize empirical evidence from various literature regarding the contribution of *whistleblowing systems* in fraud prevention and detection efforts in the public sector; (2) identify the supporting and inhibiting factors consistently found in the literature related to the effectiveness of *the whistleblowing system*; and (3) map the *existing research gaps* in this field to provide a theoretical and empirical basis for the development of further research and policy recommendations for government agencies.

This research is expected to provide benefits both theoretically and practically. Theoretically, the results of this study contribute to the development of the forensic accounting literature and public sector governance, especially in understanding the dynamics *of whistleblowing* as a social and organizational control mechanism. Practically, the findings of this study can be a reference for *policy makers* in government agencies in designing and strengthening a reporting system that is more effective, transparent, and in favor of whistleblower protection, so that it can ultimately improve the integrity and accountability of state financial management in a sustainable manner.

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LITERATURE REVIEW

Basic Concepts *of Fraud* in the Public Sector

Fraud or fraud in the public sector refers to any deliberate act to obtain unlawful gain by abusing the trust, authority, or resources of the state. By framework *Fraud Triangle* developed by Cressey, cheating occurs due to a combination of three main elements, namely pressure (*Pressure*), opportunity (*Opportunity*), and rationalization (*Rationalization*). Fauziyah & Setyawan (2022) Elaborated that in government agencies, the element of opportunity is the dominant factor that is most often exploited by perpetrators *Fraud* due to weak internal supervision system. Further, Nofianto & Prastiwi (2025) states that the *Fraud* The most common ones found in the public sector include corruption, asset misappropriation (*Asset misappropriation*), as well as manipulation of financial statements that have a direct impact on state losses on a large scale.

Whistleblowing System: Definition and Conceptual Framework

Whistleblowing system conceptually defined as a formal mechanism that allows individuals inside or outside the organization to report alleged violations, irregularities, or *Fraud* to the authorities, both internally and externally. This system serves as one of the main pillars in architecture *Good Governance* because it is able to reach information that cannot be detected through conventional audit procedures. Taufiq & Lukito (2025) explains that the conceptual framework *Whistleblowing* It covers three main dimensions, namely the reporting channel (*Reporting channel*), whistleblower protection mechanism (*Whistleblower Protection Mechanism*), and follow-up procedures (*Follow-up procedure*) that are transparent and accountable. These three dimensions must run synergistically so that this system can have a real impact in reducing the number *Fraud* in the environment of public organizations.

The Role *of Whistleblowing Systems* in Fraud Mitigation

Various empirical studies have proven that *Whistleblowing System* have a significant contribution to mitigation efforts *Fraud* in the public sector. The system works through two main pathways, namely early detection (*Early detection*) for fraud that is or has occurred, as well as the preventive effect (*Deterrence effect*) who make the potential perpetrator *Fraud* rethink before committing a violation. Nisa et al. (2025) found in their study that public sector organizations that implement *Whistleblowing System* consistently showing a significant decrease in the number of cases *Fraud* that are detected compared to organizations that do not have similar systems. This indicates that the existence of a trusted reporting channel directly influences organizational behavior in a more integrity direction.

Factors Affecting the Effectiveness of *a Whistleblowing System*

Effectiveness *Whistleblowing System* It is not automatic, but is influenced by a number of structural, cultural, and individual factors. Structurally, the clarity of regulations and the commitment of the leadership (*tone at the top*) is the main determinant of the success of this system. Meanwhile, from a cultural perspective, the level of trust of employees in the system and security guarantees for whistleblowers plays an equally crucial role. Mustafida & Mursita (2022) emphasizing that employees' perceptions of *Psychological Safety* or psychological security is the strongest predictor of a person's willingness to report cheating that he or she knows. No real guarantee of protection from threats *Retaliation*, potential *Whistleblowing System* as a mitigation instrument *Fraud* will never be optimally realized.

Regulation and Implementation of *the Whistleblowing System* in the Indonesian Public Sector

In Indonesia, the regulatory framework *Whistleblowing System* has undergone significant developments in recent years, supported by various laws and regulations that strengthen its position and protection *Whistleblower*. However, the gap between written regulations and actual implementation in the field is still quite wide and is a serious concern for researchers. Fadilah & Solomon (2023) revealed that the majority of local government agencies in Indonesia already have internal regulations related to *Whistleblowing*, but its effectiveness is still very limited due to the

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lack of socialization, weak leadership commitment, and inadequate technological infrastructure to support a secure and anonymous digital reporting system for whistleblowers.

RESEARCH METHODS

This study uses the *Systematic Literature Review* (SLR), which is a research method that systematically identifies, selects, and synthesizes various relevant studies based on structured and replicable protocols. This approach was chosen because it is able to produce comprehensive, evidence-based conclusions (*Evidence-Based*) from a large amount of literature spread across various scientific sources. The literature search process is carried out through academic databases such as *Google Scholar*, *Scopus*, and *SINTA* using keywords such as *Whistleblowing System*, *Fraud Prevention*, and *Public Sector Governance*. Articles under consideration are limited to the range of 2021 to 2025 to ensure the relevance and up-to-date of the findings. Article selection is carried out through stages *Screening* titles, abstracts, and full text based on pre-defined inclusion and exclusion criteria. Page et al. (2021) explained that the implementation of strict selection protocols in SLR aims to minimize bias and increase the validity of synthesis. Of the total articles searched, only studies that met methodological standards and thematic relevance were included in the final analysis to produce credible and scientifically accountable findings (Liberati et al., 2022).

RESULTS AND DISCUSSION

Results

Literature Selection Process

The process of identifying and selecting articles in this study was carried out using the *Preferred Reporting Items for Systematic Reviews and Meta-Analyses* (PRISMA) protocol which ensures transparency, systematicity, and reproducibility of all stages of selection. Figure 1 below presents a PRISMA flowchart that describes in detail the selection process from the initial identification to the determination of the final articles included in this study.

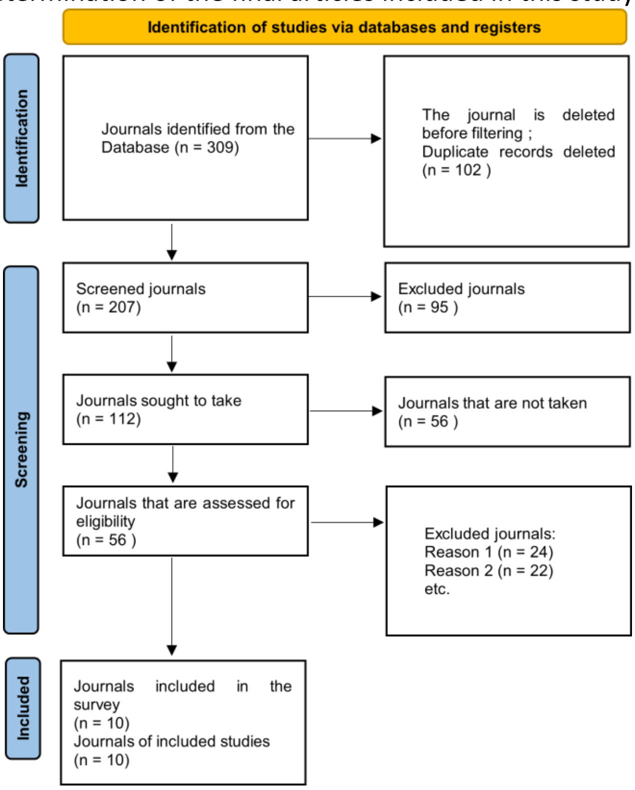

Figure 1. *PRISMA Flow Diagram* of the Research Literature Selection Process
Source: Processed by researchers, 2025

Based on the PRISMA flow diagram as presented in Figure 1 above, the selection process began with the initial identification of 308 articles from various academic databases. After the removal of duplicate as many as 102 articles, there are 207 articles that have entered the *screening stage*. At this stage, 95 articles were excluded due to inconsistencies in titles and abstracts, resulting in 112 articles being obtained for eligibility. Of these, 56 articles were eliminated for not meeting the inclusion criteria, and the remaining 56 articles were assessed *full-text*. After an in-depth assessment, as many as 46 articles were excluded with details of Reason 1 as many as 24 articles and Reason 2 as many as 22 articles, so that 10 final articles were obtained which were determined as analysis samples in this study.

Characteristics of Inclusive Studies

The ten articles that passed the selection have methodological and thematic diversity that includes quantitative, qualitative, and systematic literature reviews from various geographical and institutional contexts. The following table 1 presents the complete synthesis results of all included articles, including the identity of the author, the title of the research, the method used, the sample, the main findings, and their relevance to this research topic.

Table 1. Synthesis of Articles Included in *Systematic Literature Review*

	Author	Title	Method	Sample	Findings	Relevance to the Topic
1	(Koerner & Johnston, 2022)	Linking Organizational Capacity and Performance: The Case of Probation and Medicaid Reform in California Counties	Quasi-experimental difference-in-differences	California county-level monthly data for 6 years	Organizations with greater capacity achieve higher success rates when combined with reform resources	Provide context on the capacity of public sector organizations that support the effectiveness of prevention systems, including WBS
2	(Thakur et al., 2024)	Investigation of the Misinformation about COVID-19 on YouTube Using Topic Modeling, Sentiment Analysis, and Language Analysis	Topic modeling, sentiment analysis, language analysis	YouTube videos containing COVID-19 misinformation	4 main themes were found; English and Spanish are the most dominant; The length of a video title is significantly correlated with the number of shares on social media	Limited relevance; provide insights into the role of technology and social media in the dissemination of information that can be linked to public transparency
3	(Junaidi et al., 2024)	Fraud Detection in Public Sector Institutions: An Empirical Study in Indonesia	Quantitative survey, Structural Equation Modeling (SEM) with SmartPLS	147 auditors of BPKP RI and BPK RI	Political skills and big data have been proven to significantly increase fraud detection	It is relevant because it discusses fraud detection in the Indonesian public sector, which is the main context of the role of WBS
4	(Putra et al., 2022)	The Influence of Internal Audit, Risk Management, Whistleblowing System and Big Data Analytics on the Financial Crime Behaviour Prevention	Systematic literature review (90 articles, 1990–2021)	90 articles of leading scientific journals	Internal audit, risk management, WBS, and big data analytics have an effect on fraud prevention; WBS plays a role in early detection	It is very relevant because it directly discusses the role of WBS in the prevention of financial criminal behavior in the Indonesian public sector

5	(Achmad et al., 2024)	Forensic Accounting and Risk Management: Exploring the Impact of Generalized Audit Software and Whistleblowing Systems on Fraud Detection in Indonesia	Cross-sectional survey, multiple linear regression with moderation model (WarpPLS 8.0)	537 external auditors in Indonesia	Communication, psychosocial, accounting skills affect auditors' self-efficacy; GAS moderates the relationship between self-efficacy and fraud detection; WBS does not show significant moderation effects	It is relevant because it examines the role of WBS in fraud detection in the context of Indonesian audits, even though the results show that WBS moderation is not significant
6	(Muhyidin et al., 2025)	An Effective Whistleblowing System Model for Regional Inspectorates: A Qualitative Study in Fraud Prevention	Qualitative, thematic analysis with NVivo	Government Inspectorate of Garut Regency, Indonesia	WBS improves transparency and accountability; The main challenges include lack of socialization (35%), weak coordination (25%), ambiguous regulations (20%), limited human resources (20%)	It is very relevant because it specifically discusses the WBS model that is effective for regional inspectorates in preventing fraud in the public sector
7	(Amyar et al., 2023)	The Effect of Auditor's Professional Skepticism and Whistleblowing System on Fraud Detection: Evidence from Indonesian Public Sector Audit	Quantitative, hypothesis testing (validity and reliability)	56 respondents at the Audit Board (BPK) of the Republic of Indonesia	WBS has a positive and significant effect on fraud detection; The professional skepticism of auditors alone is insignificant, but the combination of the two synergistically improves fraud detection	It is very relevant because it directly proves the significant role of WBS in fraud detection in Indonesian public sector audits
8	(An et al., 2024)	A Gamification Approach for Enhancing Older Adults' Technology Adoption and Knowledge Transfer: A Case Study in Mobile Payments Technology	Structural Equation Modeling (SEM), one-group pretest–posttest	Seniors in Hong Kong with relevant demographic profiles	Gamification significantly increases the knowledge and intention of technology adoption in the elderly	Limited relevance; can be attributed to the importance of technology adoption in supporting the implementation of digital-based WBS in the public sector
9	(Gutner & Heltberg, 2025)	Conceptualizing and Evaluating How International Organizations Collaborate	Conceptual analysis, multidisciplinary analytical framework	International organizations (IOs) and related actors	Collaboration between organizations requires intentional design; Trust and relational processes are essential for collaboration effectiveness	Indirectly relevant; Collaboration and coordination between institutions is important in strengthening fraud supervision and reporting systems across public sector organizations

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10	(Periansya et al., 2023)	Whistleblowing, Fraud Prevention, and Fraud Awareness: Evidence from the Palembang Local Government of Indonesia	Structural Equation Modeling (SEM), a Likert scale questionnaire	122 respondents (budget staff and commitment committee) of the Palembang City Government	WBS has a positive effect on fraud awareness; However, fraud awareness has no significant effect on fraud prevention; WBS cannot be mediated through fraud awareness	It is very relevant because it directly examines the role of WBS in fraud prevention in Indonesian local governments

Source: Processed by researchers, 2025

Based on Table 1 above, it is identified that the majority of studies come from the Indonesian context with a dominant focus on testing the role *of whistleblowing systems* in fraud prevention and detection in the public sector. The most widely used method is *Structural Equation Modeling* (SEM), followed by a qualitative approach based on *thematic analysis* and a systematic literature review. This diversity of methods enriches the synthesis because it allows the triangulation of findings from various complementary methodological viewpoints.

Discussion

The Role *of Whistleblowing Systems* in Mitigating *Fraud* in the Public Sector

Findings from the overall literature consistently analyzed prove that *Whistleblowing System* have a tangible, measurable, and multidimensional contribution to mitigating *Fraud* in the public sector. This system works through two main interrelated mechanisms, namely as an early detection instrument (*Early detection*) for ongoing fraud, as well as as a catalyst for the formation of a culture of transparency and accountability within government organizations. Amyar et al. (2023) empirically proven through testing of 56 respondents at BPK RI that WBS has a positive and significant influence on the detection of *Fraud*, and when integrated with the professional skepticism of auditors, its effectiveness increases synergistically and measurably. These findings confirm that WBS is not just an administrative complaint channel, but a capacity building for human resources detectives in the organization's supervision system.

In a broader context, Putra et al. (2022) through a systematic review of 90 scientific articles from the period 1990 to 2021, it was concluded that the WBS is one of the four main pillars of financial crime prevention, together with *Internal Audit*, *Risk Management*, and *Big Data Analytics*. These four instruments make up the prevention ecosystem *Fraud* that are integrated and mutually reinforcing each other. These findings give a strong implication that the effectiveness of WBS cannot be evaluated in isolation, but must be understood in the context of an overall organizational control system. When one of the pillars weakens, the entire mitigation system *Fraud* also degraded proportionally.

Periansya et al. (2023) through his study of 122 respondents in the Palembang City Government, he added a more critical dimension to this discourse. Their findings revealed that WBS had a positive effect on *Fraud awareness*, but surprisingly *Fraud awareness* has not been shown to have a significant effect on the prevention of *Fraud* directly, and WBS cannot be mediated through consciousness variables alone. The implications of these findings are theoretically important because they show that cognitive awareness alone is not enough to change organizational behavior in real terms. More profound structural, cultural, and systemic changes are needed for WBS to truly be able to transform individual consciousness into preventive measures *Fraud* concrete and sustainable at the local government level.

Factors Affecting the Effectiveness of *the Whistleblowing System Implementation*

The identification of factors influencing the effectiveness of WBS is the most widely received analytical dimension in the literature reviewed. The results of the synthesis grouped these factors into four main categories, namely structural-regulatory factors, institutional capacity, human resources, and digital technology infrastructure. Muhyidin et al. (2025) through *Thematic Analysis* assisted by NVivo at the Garut Regency Government Inspectorate specifically identified that the main obstacles to the implementation of WBS were distributed in four main problems, namely the lack of socialization of the system to employees by 35%, weak coordination between work units by 25%, the ambiguity of applicable regulations by 20%, and the limited human resource capacity by 20%. The distribution of this problem clearly illustrates that WBS obstacles are multidimensional and will not be solved if they are only solved through a regulatory approach alone without being accompanied by strengthening organizational capacity and culture.

From the perspective of institutional capacity, Koerner & Johnston (2022) make significant analytical contributions through studies *quasi-experimental* in California's public sector for six years. The study proves that organizations with greater institutional capacity consistently achieve higher reform success rates, especially when combined with adequate reform resources. These findings can be directly transposed into the context of WBS implementation, where organizational capacity includes the quality of human resources, the strength of system infrastructure, and leadership commitment (*tone at the top*) is a fundamental prerequisite for the operationalization of a meaningful WBS. Public agencies with deficits in institutional capacity tend to implement WBS procedurally and symbolically without substance that results in real change.

The technology dimension is present as a determining factor that is increasingly crucial in the era of digital transformation. Junaidi et al. (2024) in its empirical study of 147 BPKP and BPK RI auditors proved that *Political Skill* and *Big Data* Together it has been proven to increase detection capacity *Fraud* significantly. These findings have direct implications that technology integration *Big Data* into the WBS ecosystem is no longer an additional option, but an urgent strategic need. Reinforcing this argument, An et al. (2024) through his studies in Hong Kong proved that the *Gamification* In the process of adopting technology, it is able to significantly increase user knowledge and intention through interactive and participatory design. These findings are very relevant to be applied in the context of digital-based WBS training and socialization to state civil servants, where conventional approaches have proven to be less able to encourage active participation of employees in utilizing the available reporting system.

***Research Gap* and Further Research Directions**

Research gap mapping (*Research gap*) is one of the most important contributions of this systematic review. The results of cross-study analysis revealed that although the literature on WBS in the public sector has grown rapidly, there are still some knowledge gaps that require further exploration by future researchers. Achmad et al. (2024) Through surveys *Cross-sectional* 537 external auditors in Indonesia produced findings that differed and contradicted from the majority of the literature, i.e. the WBS did not show a significant moderation effect between *self-efficacy* Auditor and Detection *Fraud* in the context of external audits. These contradictory findings actually enrich and sharpen scientific discourse because it opens up critical new questions about *Boundary conditions*, i.e. the boundary conditions under which the WBS effectively operates and in which it fails to deliver the expected impact.

The dimension of cross-organizational collaboration as a systemic factor supporting integrated public supervision is still relatively minimally explored in the existing literature. Gutner & Heltberg (2025) Through multidisciplinary conceptual analysis of various international organizations, it is emphasized that collaboration between organizations requires deliberate design (*Intentional Design*), based on institutional trust and relational processes that are built up gradually. This perspective opens up very relevant research opportunities on how systemic collaboration between supervisory institutions in Indonesia—such as KPK, BPK, BPKP, and regional inspectorates—can synergistically strengthen the WBS ecosystem so that it does not run in fragmentation and silos.

The dimension of misinformation and public narrative management in the digital era has also emerged as a *Research gap* significant and has not received adequate attention. Thakur et al. (2024) in its comprehensive analysis of COVID-19 misinformation on YouTube identified four main themes of the spread of misleading information, with English and Spanish as the most dominant mediums, and found that the characteristics of digital content were significantly correlated with the rate of dissemination on social media. These findings signal a relevant warning for WBS management, because in the era of social media, distorted information and negative narratives about *Whistleblower* can spread very quickly and has the potential to undermine public trust in the existing reporting system fundamentally.

Overall, the synthesis of the ten articles analyzed provides a comprehensive and sharp picture that WBS is a fraud mitigation instrument that has proven to be relevant and effective in the public sector, but its success is highly determined by the organization's multidimensional readiness which includes regulatory maturity, human resource capacity, internalization of integrity culture, and the sophistication of the technological infrastructure that supports the system. Further research is strongly recommended to develop a contextual WBS model for various typologies of government agencies in Indonesia, empirically examine the moderation and mediation factors that still produce diverse findings, and explore the dimensions of cross-agency collaboration and *digital whistleblower* reputation management as variables that have been neglected in the existing literature.

CONCLUSION

Based on the synthesis of ten articles analyzed through *a systematic literature review approach*, it was found that *the whistleblowing system* (WBS) has a significant role in reducing the number of fraud in the public sector. This system does not simply function as a complaint channel, but as a strategic instrument that encourages transparency, strengthens the culture of integrity, and increases the capacity of early detection of fraud in the organization. The success of WBS is determined by multidimensional readiness which includes leadership commitment, regulatory maturity, human resource capacity, psychological *safety*, and adequacy of technological infrastructure. Without the readiness of these elements, WBS will only run procedurally without producing substantive changes in the governance of government agencies. Future research is expected to develop a more contextual and adaptive WBS model in accordance with the typological characteristics of government agencies in Indonesia. In addition, empirical testing of moderation and mediation variables that still show mixed results—such as the relationship between *fraud awareness* and fraud prevention—needs to be continued with a more comprehensive research design. The dimension of collaboration across supervisory agencies, such as the synergy between the KPK, BPK, BPKP, and regional inspectorates, also deserves to be explored in more depth. In terms of policy, the government needs to strengthen the socialization of WBS in a sustainable manner, build a secure and anonymous digital reporting infrastructure, and ensure real protection for *whistleblowers* so that this system can function optimally.

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