Employee Perception of Whistleblowing in the Workplace: A Systematic Bibliometric Review

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ABSTRACT
This paper systematically reviews employee perceptions of whistleblowing in the workplace. The theoretical foundation of this paper lies in the study of whistleblowing as an integral part of internal control systems for fraud prevention in organizations. About 806 publications in the Web of Science database were analyzed using a bibliometric approach entailing bibliographic coupling and co-word analysis. The review explores the study of whistleblowing, which is constantly rising as a result of the fact that many countries are strengthening their organizational whistleblowing systems. It is anticipated that more publications will be generated in the future years. The empirical results of this study indicate that a positive corporate working environment should be promoted from the top down and cultivated horizontally. The findings of this study, which were based on actual evidence, are helpful from a pragmatic point of view. Specifically, companies would need to foster a corporate climate that makes it easier for employees to report any probable or seen misconduct to higher authorities. This paper presents a novel knowledge structure by mapping employee perceptions regarding whistleblowing in the context of minimizing ongoing wrongdoings in organizations based on bibliometric analysis. Moreover, future studies should address organizational culture or the role of leadership in employee whistleblowing.

INTRODUCTION

Corporate crimes, such as corrupt and fraudulent practices, impede long-term socio-economic growth in developing and developed nations. Vulnerabilities in preventing such activities can impair accountability, leading to various issues such as the misalignment of market processes, a decline in local and international investments, and a loss of future economic prospects (Schafer and Schafer, 2019; Okafor et al., 2020; Batumalai et al., 2022; Wan Husain et al., 2023). Corruption has a significant economic impact globally, contributing to over 5% of the worldwide Gross Domestic Product (GDP). A 2018 study by United News claims that the yearly payment of bribes surpasses $2.6 trillion. Whistleblowing is crucial
to preventing corruption within organizations. The Association of Certified Fraud Examiners (ACFE, 2020) shows that almost 50% of fraud cases were uncovered through tips from people who observed misconduct or wrongdoing within the organization. This finding is based on examining 2,504 recorded fraud instances that occurred in 125 different countries and caused losses greater than $3.6 billion. Whistleblowing has proven highly effective in reporting and preventing illegal practices within organizations. It can thwart or mitigate fraudulent behaviour, mainly when most employees are willing to report unethical practices leading to fraud (Vaughn, 2012; Latan et al., 2022). One solution to address this is the introduction of internal whistleblowing mechanisms aimed at curbing fraudulent behaviours in the workplace. Top management must encourage whistleblowers and support initiatives or activities that help reduce fraudulent behaviours (Mkheimer et al., 2022; Srivastava and Gupta, 2022; Ahmad et al., 2019). The government must educate the employees about the importance of ethical conduct and loyalty to the organizations so that they can whistleblow without fear to prevent fraud (De Graaf, 2015; Ciasullo et al., 2017). The mechanism of whistleblowing is very effective in these types of cases in which a person may blow the whistle to detect fraud or illegal practices to prevent or stop these practices in organizations (Dungan et al., 2019; Kaptein, 2022). The Pricewaterhouse Coopers PwC report shows that nearly half of the companies are involved in fraudulent activities at some level, and the employees do these fraudulent activities. According to the PwC study, the most effective tool is whistleblowing by the employees to identify wrongdoing because they are very close to business operations and can detect illegal or unethical practices, especially finance-related crimes. Many research studies show that most employees do not report illegal or unethical practices due to fear or pressure (Brown and Olsen, 2008; Zhang et al., 2009; Hassan, 2015). The whistleblowers do not report the wrongdoings or frauds in the organizations due to a fear of revenge from their superiors or top management. In another study, the researcher showed that employees do not trust their supervisors or organizations to report fraud openly (Lexology, 2017). The increasing number of fraud and corruption incidents shows that most people do not report misconduct, and the number of people reporting misconduct remains low. Therefore, the employees' actions for whistleblowing are directly linked to their leaders' and supervisors' attitudes (Thea Wathne, 2012).

Although there are many review studies on whistleblowing, there is a need to find more reasons and measure employees' perceptions about whistleblowing in organizations. Past studies provide the fundamental direction and basis for the development of this review. Culiberg and Mihelič (2017) present a narrative review by proposing a conceptual framework of whistleblowing based on who, what, how, why, and who, clarifying the main aspects of the phenomenon. Nicholls et al. (2021), in their systematic review of 217 whistleblowing studies, identified dimensions of whistleblowing intentions. The dimensions included the perpetrator, the offence, reporting, cost and benefit, social and organizational variables, personal factors, and outcome expectancies. Lee and Xiao (2018) looked into the factors that influence internal and external whistleblowing on accounting misconduct in a much more focused manner. The study also evaluates the impact of whistleblowing on firms and whistleblowers. In another accounting context, Gao and Brink (2017) reviewed whistleblowing based on five determinant characteristics (whistleblower, report recipients, wrongdoer, wrongdoing, and organizations). To the best of the authors' knowledge, research still needs to examine the knowledge structure of whistleblowing despite these thorough evaluations in the literature. This study offers a science mapping technique to identify the knowledge structure based on the existing structure and anticipated future developments in whistleblowing research in the literature. Additionally, to uncover the knowledge structure of this phenomenon, this research looks at employees' viewpoints regarding whistleblowing, with a particular emphasis on determining the elements influencing whistleblowing based on the science mapping approach. Based on the authors' knowledge, there have yet to be any studies that explore whistleblowing in organizations from the perspective of bibliometric analysis. As such, the following...
objectives are presented:

- To evaluate the current structure of employees' perceptions of whistleblowing in the organization through bibliographic coupling analysis.
- To determine future research trends in whistleblowing in the organization through co-word analysis.

The structure of the paper is as follows. An overview of the subject of whistleblowing in organizational settings is given in this section. Section 2 outlined the literature on whistleblowing by highlighting the role of whistleblowers in organizations. Section 3 discusses the bibliometric analysis methodology for performing the science mapping. The findings and discussions based on the clusters produced by the co-word and bibliographic coupling analyses are presented in Section 4. Section 5 delves into the consequences of whistleblowing about employee views. Section 6 suggests future research avenues for whistleblowing studies. Finally, section 7 concludes the study.

This study also addresses a critical gap in the existing literature by systematically examining employee perceptions of whistleblowing to mitigate organizational wrongdoing or fraud by employing a novel knowledge structure derived from bibliometric analysis. The significance of the fraud theory lies in expanding the understanding of whistleblowing as an internal control system (Dorminey et al. 2012). According to Puspasari (2015), if auditors find that internal controls are weak, it is a sign that fraud may be occurring in the organization. Joenperä et al. (2022) believed that current research highlights the increasing importance of whistleblowing in fraud prevention. However, a comprehensive understanding of how employees perceive and engage with these mechanisms is still lacking. Therefore, by mapping employee perception, organizations can leverage this to foster a culture conducive to ethical reporting (Alleyne et al., 2017) and contribute to a more nuanced understanding of the interaction between organizational dynamics and employee behaviour in the context of fraud prevention.

LITERATURE REVIEW

Whistleblowing reports concerns or disagreements about current or former employees that promote illegal actions or wrongdoing (Petersen and Farrell, 1986; Near and Miceli, 1995; Rijal, 2016). In a much broader definition, it is contextualized as a behaviour performed by the employee or anyone within the boundary of a corporation that exposes, discloses, and reveals information that the employee strongly and reasonably believes as well as possesses solid evidence of the Act of the corporation, for instance, any act that breaches the law or the corporation's rules and regulations, miscarriage of justice, bias, and appropriation of financial information, as well as any threat that exposes the general public to health and safety risks (McGee, 2009; Ciasullo et al., 2017). Previtali and Cerchiello (2017) found whistleblowing elements in public organizations like universities, health organizations, and municipalities. They discovered that whistleblowing occurs in huge public organizations with proper procedures to promote whistleblowing by educating and training individuals. Whistleblowing may be internal or external. Internal whistleblower systems provide guidance and safety to inside whistleblowers who want to report information internally (Kaptein, 2011). According to Stikeleather (2016), internal whistleblowing is crucial for organizations to control or prevent wrongdoing or illegal activities. Scherbarth and Behringer (2021) stated that internal whistleblowing systems are increasingly used to detect and avoid compliance violations. Van Eck and Waltman (2019) described in their research study that organizations must promote internal communication modes for whistleblowers who report externally or outside the organization to tackle the challenges of malpractices and wrongdoings. According to Scherbarth and Behringer (2021), internal whistleblowing systems can be designed to receive reports of illegal, illegitimate, and immoral practices inside the organization, where employees report information quickly and without fear or pressure. To enhance the effectiveness of an internal whistleblowing system, there is a mechanism for writing externally, like creating confidential hotlines where employees can report easily without fear. Internal whistleblowing systems may contain audit departments, organizations' compliance, and
the ombudsperson for receiving reports internally. Whistleblowing aims to gain and protect individual interests. The organizational reasons contain the ethics of business and expectations of the subsequent promotion, whereas social reasons include social justice, benefits, and religious beliefs. However, employees refrain from whistleblowing due to worry and retaliation. Strack (2011) states that whistleblowers do not tolerate illegal activities, dangers to the public, or economic and environmental fraud. Still, these people disclose internal and external abuses from the organization that may jeopardize its reputation. Several studies (Miceli et al., 2012; Mannion and Davies, 2015) showed that many employees working in organizations silently notice wrongdoing and illegal activities and do not report anyone. These types of employees are called silent observers or whistleblowers; as described in the study, whistleblowers prefer to write within the organization instead of talking to someone outside the organization. This showed that whistleblowers like to report something that directly affects them rather than something that is a social responsibility or obligation for them to say. It is critical to understand the knowledge structure surrounding the whistleblower phenomenon, including its causes, effects, and implications for workers. As such, through a bibliometric analysis, this study generates themes related to whistleblowing based on the scientific mapping of past literature, providing the basis for current and future studies on the subject.

**Role of whistleblowers**

There are several factors in whistleblowing: individual, group, and organizational (Hersh, 2002; Lavilles Jr and Robles, 2017). Moral concerns were found to consistently predict whistleblowing decisions over and above other organizational and situational factors. According to Iwasaki (2020), whistleblowers analyze the factors of monetary and non-monetary as well as cost-benefit analysis while engaging themselves in whistleblowing. The whistleblowers also ensure legal protection before whistleblowing because of internal and external threats. Cailleba and Charriere Petit (2018) showed that whistleblowers are morally and ethically motivated to report illegal activities, mal-activities, and other wrongdoings. Previous research showed in their research study that whistleblowers engage in whistleblowing for monetary or personal benefits. According to Cassematis and Wortley (2013) research, whistleblowers weigh the costs and benefits of coming forward with information before determining whether to speak up or remain silent. They also found that whistleblowers consider factors like organizational support, educating employees to report illegal activities, and protecting the whistleblower's identity and the situation (wrongdoing proof and threat of fear) before raising a voice against illicit activities or wrongdoings. Dungan et al. (2019) found in their two research studies with a large data set that moral concerns play a vital role in whistleblowing. They discovered that morally motivated employees did not hesitate to report illegal activities or wrongdoings. Still, the employees who were given the education to report unlawful activities were found less interested in writing about illegal activities or wrongdoings (Hamood et al., 2023) The whistleblowers played an essential role in exposing financial and investment fraud, including violations of the laws and regulations. Research studies on organizational whistleblowing have a positive and quantitative approach to profiling whistleblowers and trying to understand people's voices, the impact made, or the reprisals suffered (Miceli et al., 2009). Valentine and Godkin (2019) examined the relationship between individual perceptions of ethical decision-making, moral intensity, and whistleblowing intentions. They found that moral intensity, consequence severity, and social consequences are positively associated with ethical decision-making, such as recognising and perceiving the importance of righteous judgment, question, and intention. Their research showed that perceived significance, recognition, and ethical judgment are positively linked to whistleblowing intentions.

**Employee perception of whistleblowing**

Employee perception plays a vital role in influencing attitudes and behaviour towards whistleblowing (Heumann et al., 2016). Understanding how employees perceive reporting misconduct, safety, and efficacy is crucial for promoting an organizational speak-up culture (Vandekerckhove et al., 2016; Hess et al., 2019). Recent studies delve into the intricate factors influencing employee perceptions.
of whistleblowing (Mrowiec, 2022; Jam et al., 2011). Chordiya et al. (2020) emphasize the role of top management in encouraging whistleblowers and supporting initiatives that reduce fraudulent behaviours. Lee et al. (2018) work highlights the importance of fostering a positive corporate working environment that facilitates the reporting of misconduct.

To understand the practical impact of fraud prevention, examining organizations that have successfully implemented whistleblowing systems provides valuable insights. Kang (2023) identification of whistleblowing elements in public organizations, such as universities and health institutions, exemplifies how proper procedures and education can shape employee perception and encourage reporting. Stubben and Welch (2020) research on internal whistleblowing systems further reinforces the connection between employee perception and fraud prevention. Organizations enhance whistleblowing’s perceived safety and efficacy by creating mechanisms that allow employees to report illegal, illegitimate, or immoral practices without fear.

Many organizations have practical implementations of whistleblower systems and have seamlessly integrated confidential hotlines and whistleblower protection policies, creating an environment where employees feel safe reporting misconduct (Nurhidayat and Kusumasari, 2018). This proactive approach has increased employee perception positively and led to preventing and detecting fraudulent activities.

METHODOLOGY

Bibliometric analysis

Researchers can better grasp the knowledge structure based on scientific mapping using the bibliometric technique, a quantitative method that uses the bibliographic database (Donthu et al., 2021). To analyze and evaluate scientific literature, the bibliometric technique is anticipated to be used in addition to the existing quantitative meta-analysis and qualitative systematic literature review. This study employs the two analyses listed below to meet its goals:

**Bibliographic coupling:** This method examines how frequently various primary sources are referenced in other writing pieces. Instead of the mentioned document, the secondary document cited is the focus of the analysis (Batistić and van der Laken, 2019). The relationship between the two texts is assumed to be more significant if their bibliographies overlap. Based on its most recent developments, the study is appropriate to expose a wide range of fields and provide the current situation (Donthu et al., 2021; Malik, 2023; Fatima et al., 2023).

**Co-word analysis:** Based on the title, abstract, and keywords, this approach determines how often a keyword appears in a bibliographic database by researcher. Co-word analysis studies how frequently occurring words relate to one another. Contrary to bibliographic coupling, which uses citing publications as a proxy or focus point in the study, co-word is essentially an approach that analyzes publications based on their actual content. Co-word analysis helps forecast future field trends based on the influence of the publication’s key terms (Donthu et al., 2021; Jam et al., 2011).

**Research design and procedure**

In this investigation, the following search phrase was utilized (table 1) to find pertinent articles on two topics: 1) whistleblowing and 2) workplace or organization. The Web of Science (WoS) Core Collection was applied to extract the bibliographic database. Due to its thorough and high-quality indexing of more than 21,100 articles, this database has been employed in most bibliometric and scientometric literature (González-Serrano et al., 2020; Fauzi, 2022). The search technique solely uses the title, abstract, and author keywords in the T.S. search string.

**Table 1: Search string applied in WOS database**

<table>
<thead>
<tr>
<th>Database Search String</th>
</tr>
</thead>
<tbody>
<tr>
<td>WOS &quot;whistleblowing*&quot; OR &quot;whistle-blowing*&quot; OR &quot;whistleblower*&quot; OR &quot;whistle-blower*&quot; AND &quot;work<em>place</em>&quot; OR &quot;organization*&quot; OR &quot;company*&quot; OR &quot;firm*&quot; OR &quot;office*&quot; OR &quot;enterprise*&quot;</td>
</tr>
</tbody>
</table>
To limit the search results to only peer-reviewed articles, conference proceedings, books, book chapters, editorials, and white papers are excluded from the search, and only journal publications remain. VOS viewer version 1.6.17.0 was used to examine the bibliographic networks.

**RESULTS AND DISCUSSION**

The search for this study was conducted on October 10, 2022. The initial search yielded 959 documents, and after filtering for journal publications, the final list comprised 806 documents. These publications received 15,513 citations, with 10,577 citations excluding self-citations. The h-index for these publications was 62, and the average citation per item was 19.22. Figure 1 illustrates the number of publications and citations received on whistleblowing publications from 1980 until October 2022. It can be concluded from the graph that the study of whistleblowing is steadily increasing, with more than 40 publications since 2017. As many countries strengthen their whistleblowing systems within the organization, it is predicted that more publications will be produced in the coming years.

![Figure 1: Number of publications and citations received for whistleblowing publications](Source: Web of Science)

**Bibliographic coupling**

Of the 806 journal documents considered in the bibliographic coupling analysis, 43 surpassed the threshold of 71 citations. The analysis produces three clusters representing significant current themes in whistleblowing literature. The threshold was finalized based on several trials until the network map reached the most appropriate number of clusters. The threshold was tested several times with 68, 69, 70, 72, 73, and 74 until the most stable map was produced. The threshold must be high and higher, which could lead to over-filtering and under-filtering, respectively (Geng et al., 2020). Table 2 lists the top 10 publications based on total link strength (TLS), where bibliographic content is constructed around the strength of the link between two documents that share a third reference publication. The top three papers are Mesmer-Magnus and Viswesvaran (2005) (282 TLS), Near and Miceli (1995) (288 TLS), and Kaptein (2011) (298 TLS).

<table>
<thead>
<tr>
<th>Rank</th>
<th>Publication</th>
<th>Citation</th>
<th>Total link strength</th>
</tr>
</thead>
</table>
Yee et al.

Cont.....

<table>
<thead>
<tr>
<th>Rank</th>
<th>Publication</th>
<th>Citation</th>
<th>Total link strength</th>
</tr>
</thead>
</table>

Figure 2 displays the network map of the bibliographic coupling study. The figure presents three distinguished clusters (red, green, and blue), with substantial publications in each cluster. Meanwhile, only three publications are in a seemingly negligible cluster 4 (yellow). The following three clusters were qualitatively interpreted based on the author's inductive analysis:

- Cluster 1 (red): 19 publications are labelled "Motivations of whistleblowing among employees". Past and current studies focus on understanding employees' motivations for whistleblowing. This cluster presents fundamental publications that view internal and external motivation among employees to whistleblow. Based on the theory of planned behaviour among South Korean police officers, the main finding shows that all three TPB variables were significant for internal whistleblowing. At the same time, in the external context, only the subjective norm was important (Park and Blenkinsopp, 2009). Vadera et al. (2009) studied an identity approach that clarified the inconsistencies in individual-level motives to whistleblow. At the time of writing, more knowledge...
Employee Perception of Whistleblowing

is still needed on the motives of potential whistleblowers. Klaas et al. (2012) studied workplace voice determinants, including whistleblowing, grievance filing, prosocial voice, and informal complaints. The results indicate that the three voice dimensions are formality, focus, and identifiability. The three dimensions are different for each alternate voice type.

- Cluster 2 (green): With 13 publications, Cluster 2 is labelled "whistleblowing obstacles in the organization". According to Rothschild and Miethe (1999) analysis of national statistics, whistleblowing is more common in public than in the private sector. The finding also suggests that whistleblowers and silent observers cannot be distinguished from sociodemographic characteristics. Furthermore, whistleblowers face retaliation from management, particularly those holding significant information. Miceli and Near (2002) deduced from three field studies on whistleblowers that the action is likely to be terminated when it less frequently occurs has a minor impact, and whistleblowers have greater power than the people involved. Rehg et al. (2008) investigated gender differences in the antecedents of whistleblowing as an outcome of retaliation. In males, there was a significant lack of support from others and low whistleblower power. In contrast, for females, serious wrongdoings, lack of support, and wrongdoings direct effects were significantly associated with retaliation.

- Cluster 3 (blue): Cluster 3 comprises only six publications labelled "theoretical foundations of whistleblowing". There is an absence of integrative theory explaining individual whistleblowing intentions in the organization (Keil et al., 2010). In building and developing whistleblowing theory, Smith and Keil (2003) examined the reluctance to communicate negative information in the context of a software project. The model was created from various fields, including organizational behaviour, ethics, psychology, communication, economics, and information systems. From the social information processing perspective, Keil et al. (2010) proposed a "benefit-to-cost" differential model that mediates whistleblowing variables and intentions. The results of 159 IT project managers show that the central explanatory variables were found to influence whistleblowing behaviour.

The bibliographic coupling analysis of whistleblowing within the organization is shown in Table 3. Colour, label, number of publications, and representative publications are displayed for each cluster.

Table 3: Bibliographic coupling analysis on whistleblowing in organization

<table>
<thead>
<tr>
<th>Cluster No and Colour</th>
<th>Cluster Label</th>
<th>Number of Publications</th>
<th>Representative Publication</th>
</tr>
</thead>
</table>

Co-word analysis

The co-word analysis was conducted using the same database. 46 out of 2,721 keywords satisfied the 19 standards and were examined more thoroughly. The most frequently occurring words are "whistleblowing" (216), "retaliation" (115), "organizations" (114), "behaviour" (112), and "ethics" (96). Another keyword, "whistleblowing," is another main keyword for "whistleblowing" with the hyphen. These keywords are central to whistleblowing in the organization's literature.

The top 15 terms, their occurrences, and TLS are compiled in Table 4.
Table 4: Top 15 keywords in the co-occurrence of keywords analysis

<table>
<thead>
<tr>
<th>Rank</th>
<th>Keyword</th>
<th>Occurrences</th>
<th>Total link strength</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Whistleblowing</td>
<td>216</td>
<td>592</td>
</tr>
<tr>
<td>2.</td>
<td>Retaliation</td>
<td>115</td>
<td>488</td>
</tr>
<tr>
<td>3.</td>
<td>Organizations</td>
<td>114</td>
<td>496</td>
</tr>
<tr>
<td>4.</td>
<td>Behaviour</td>
<td>112</td>
<td>459</td>
</tr>
<tr>
<td>5.</td>
<td>Ethics</td>
<td>96</td>
<td>284</td>
</tr>
<tr>
<td>6.</td>
<td>Whistle-blowing</td>
<td>92</td>
<td>287</td>
</tr>
<tr>
<td>7.</td>
<td>Intentions</td>
<td>68</td>
<td>338</td>
</tr>
<tr>
<td>8.</td>
<td>Perceptions</td>
<td>64</td>
<td>256</td>
</tr>
<tr>
<td>9.</td>
<td>Information</td>
<td>63</td>
<td>253</td>
</tr>
<tr>
<td>10.</td>
<td>Predictors</td>
<td>57</td>
<td>286</td>
</tr>
<tr>
<td>11.</td>
<td>Employees</td>
<td>53</td>
<td>252</td>
</tr>
<tr>
<td>12.</td>
<td>Management</td>
<td>47</td>
<td>192</td>
</tr>
<tr>
<td>13.</td>
<td>Blowers</td>
<td>45</td>
<td>177</td>
</tr>
<tr>
<td>14.</td>
<td>Corruption</td>
<td>45</td>
<td>146</td>
</tr>
<tr>
<td>15.</td>
<td>fraud</td>
<td>45</td>
<td>141</td>
</tr>
</tbody>
</table>

Figure 3 displays the co-word analysis's network map. It visualizes four significant clusters, closely intersecting one another, indicating potential whistleblowing trends. The following clusters were qualitatively interpreted and labelled:

- **Cluster 1 (red):** Cluster 1, with 15 keywords, is labelled "Whistleblowing and workplace deviance". Workplace deviance and misconduct are conceptualized as intentional behaviours that can potentially cause harm to the organization and individuals (Gotz et al., 2019). According to Okafor et al. (2020), whistleblowing is a method of accountability to combat fraud and corruption. Adequate whistleblower protection is achieved by raising public trust and strengthening the institution by encouraging the public to prevent workplace deviance, particularly corruption (Nurhidayat and Kusumasari, 2018). The whistleblowing system must be visible in an organizational setting. Its absence increases employees' fraud intentions (Triantoro et al., 2020).

- **Cluster 2 (green):** Cluster 2 discusses "whistleblowing and retaliation". Whistleblower retaliation is a concept in organizations referring to whistleblowers punished for disclosures (Kenny et al., 2019). Retaliation can manifest in various forms, from job loss and demotion to unfavourable working conditions.
According to research findings (Yang and Xu, 2020), the fear of retaliation emerged as a significant predictor for employees engaging in external whistleblowing. In contrast, its impact on internal whistleblowing was not observed. It was suggested that company retaliation policies should receive input from employees to promote ethical behaviours. Reducing retaliation costs for whistleblowers was found to increase whistleblowing (Heese & Perez-Cavazos, 2021). Because they fear reprisal, employees frequently hesitate to provide facts or raise a whistle.

• Cluster 3 (blue): With ten keywords, Cluster 3 is labelled "Impact of whistleblowing on employees' performance and commitment". Many studies found that employees were reluctant to report deviant behaviour due to potential retaliation for whistleblowing (Kwon et al., 2021). The study also suggests that organizational and environmental factors positively influenced employees' whistleblowing over time. Exmeyer (2020) investigated employee perceptions of whistleblowing from the perspective of procedural justice. The study indicates that whistleblower laws or external disclosure channels do not affect the perception of procedural justice. Their organizational commitment and supervisory level strongly influenced workers' perceptions of procedural justice. Yang and Xu (2020) studied employees in the banking sector with negative and positive perceptions of whistleblowing. It was concluded that fear of retaliation (damaging) was the most crucial factor in predicting external whistleblowing, but not internal. Meanwhile, employees' fear of reprisals determines whether employees positively impact the positive perception of internal whistleblowing.

• Cluster 4 (yellow): With seven keywords, cluster 4 is labelled "Predictors of whistleblowing in the organization". Understanding the predictors of whistleblowing in the organization is crucial. Several studies adopted the theory of planned behaviour in predicting behaviour (May-Amy et al., 2020; Sarikhani and Ebrahimi, 2022). In the study of May-Amy et al. (2020), all the TPB variables were significant predictors of intention to whistleblower. However, neutralization was not a moderating factor tested in the study.

In contrast, Sarikhani and Ebrahimi (2022) discovered similar findings regarding the moderating role of perceived moral intensity in the relationship between the intention to whistleblower and the subjective norm. Dungan et al. (2019) studied federal employees' ethical concerns that predict whistleblowing decisions. It was found that moral concern consistently predicted the decision to whistleblow better than other situational and organizational factors.

Table 5 provides an overview of the co-word analysis, cluster colour and number, cluster labels, number of keywords, and sample keywords.

<table>
<thead>
<tr>
<th>Cluster No and colour</th>
<th>Cluster label</th>
<th>Number of keywords</th>
<th>Representative Keywords</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (red)</td>
<td>Whistleblowing and workplace deviance</td>
<td>15</td>
<td>Whistleblowing, ethics, corruption, fraud, governance</td>
</tr>
<tr>
<td>2 (green)</td>
<td>Whistle-blowing and retaliation</td>
<td>14</td>
<td>Behaviour, retaliation, management, blowers</td>
</tr>
<tr>
<td>3 (blue)</td>
<td>Impact of whistleblowing on employee's performance and commitment</td>
<td>10</td>
<td>Perceptions, performance, impact, intentions, employees</td>
</tr>
<tr>
<td>4 (yellow)</td>
<td>Predictors of whistleblowing in the organization</td>
<td>7</td>
<td>Predictors, perspective, organizations, unethical behavior, decision-making</td>
</tr>
</tbody>
</table>
Implications
Whistleblowing positively impacts the organization through transparent management, open communication, and a positive work atmosphere between leaders and followers. Whistleblowing perceptions among employees are crucial in preventing such phenomena from occurring and further manifesting. Ab Ghani (2013) stated that revealing misconduct in the organization by whistleblowers is very effective, but they face negative consequences. They face workplace retaliation through harassment, intimidation, violence, or dismissal by their colleagues or the superior officers, i.e., the top management officers. Therefore, a protection policy for whistleblowers must be implemented to protect the whistleblower’s identity. For instance, the Malaysian government provides whistleblowers with legal protection through the Whistleblower Protection Act 2010. However, there are several areas for improvement in this legislation, especially in three critical areas: (i) the method for whistleblowing, (ii) the Act’s independence, and (iii) the protection provided to whistleblowers. (Leong, 2017; Jan 2017) These deficiencies demand a more critical and contentious analysis by experts and scholars. The Act of 2010 guarantees confidentiality and protects whistleblowers from civil and criminal prosecution when they expose unethical behaviour in the public and private spheres. However, Wan Jan (2017) states that only whistleblowers are given protection when they report to enforcement agencies. They are entirely unprotected otherwise. Loi (2019) argues that to encourage whistleblowing, there needs to be more than just the protection provided by the Whistleblower Protection Act of 2010. With the implementation of applicable legislative acts in whistleblowing around the world, the crucial existence of whistleblowers, enforcement agencies, and government bodies has collectively developed a strong force in entraining whistleblowing behaviour in the workplace; legal protection has been granted to the whistleblower, and proper and secure channels of reporting to enforcement agencies have also been established. These fantastic actions strongly message existing shareholders and future investors to retain high reliability and integrity in the investment sector. Suppose a company has a whistleblowing policy and a specific and secure route of reporting established inside its premises. In that case, the possibilities of misconduct or malpractice are significantly reduced. This is due to the ease with which any wrongs or misconduct may be uncovered and disclosed under such a regime. In their research study, Loyens and Vandekerckhove (2018) found that whistleblowing agencies are present to apply whistleblowing legislation like psychosocial care, advice, wrongdoing or retaliation investigation, and protection from wrongdoings in different countries. NGOs fill the gap when the agencies are absent or very weak in applying whistleblowing legislation in their countries. Nurhidayat and Kusumasari (2018) found a need to make a more systematic and practical whistleblowing system to protect many aspects like ethical and human culture, legal protection, policy, and organization structure with the structures and processes. Raising public trust in public organizations and whistleblowers' protection is necessary.

CONCLUSION
The empirical findings of this study are beneficial from a practical perspective. Organizations must cultivate a corporate environment that eases employees’ reporting and decision-making to report any possible or observed wrongdoing to a higher authority. However, this could only be achieved if organizations could safeguard the interests of whistleblowers against any possible retaliation. One of the possible ways to do so is by developing and formalizing the anti-retaliation policy to publish any employee who causes a potential threat to whistleblowers. According to ISO/IEC 27018, Information Technology, Security Approaches, and Code of Practice for Protecting Personally Identifiable Information (PII) in Public Clouds Functioning as PII Processors, maintaining the confidentiality of whistleblowers’ identities is essential to successfully implement whistleblowing. Organizations should make reporting channels anonymous to protect whistleblowers and encourage an atmosphere of whistleblowing. On the other hand, recommendations for creating, putting into practice, and maintaining an efficient whistleblowing management system founded on impartiality, protection, and trust are provided by ISO (2021) Whistleblowing Management System,
which was released in July 2021. These ISO guidelines provide an alternative solution to resolve specific issues. The guidelines stated whistleblowing best practices for implementing, maintaining, and improving whistleblowing policies and procedures with intended outcomes. It entails promoting and enabling the reporting of wrongdoing, offering protection and support to whistleblowers and other relevant parties, ensuring that allegations of wrongdoing are handled correctly and promptly, enhancing organizational culture and governance, and lowering the likelihood of wrongdoing. Ultimately, this paper provides insight through science mapping and bibliometric analysis on whistleblowing knowledge structure based on published WoS materials. This study provides an implicit understanding of whistleblowing by analyzing employees' perceptions of whistleblowing and how it could be used as an internal control system to prevent wrongful actions in organizations. The empirical result of this study concluded that a positive corporate working environment should be promoted from the higher authority level and then cultivated among employees horizontally. Thus, organizations should operationalize the attitude of whistleblowing through formalized and anonymous reporting channels.

Moreover, creating a corporate climate that promotes whistleblowing is crucial for organizational integrity, and this approach has been systematically explored in numerous review papers, including systematic bibliometric reviews. One effective strategy is establishing clear and confidential reporting channels, such as whistleblower hotlines or online platforms, to ensure employees feel secure when reporting misconduct. Leadership commitment is pivotal; executives should consistently communicate the organization's dedication to ethical conduct, creating a culture where whistleblowers are protected and valued. Frequent ethics training is helpful because it informs staff members about the safeguards in place and the significance of whistleblowing. Additionally, organizations should regularly review and update their whistleblower protection policies to ensure alignment with evolving best practices. This systematic approach, as evidenced in numerous reviews, underscores its effectiveness in fostering an environment conducive to whistleblowing and ethical behaviour within companies.

**Suggestions for future research**

The most prevalent concern about whistleblowing is understanding the predictors of whistleblowing intention in the organization. As fraudulent and ethical issues occur rampantly in organizations, employees must be motivated to whistleblow for individual and organizational benefit. Between internal and external whistleblowing, the latter evidence of employee engagement is lacking (Tuan Mansor et al., 2022). There are specific barriers and obstacles to engaging in external whistleblowing. For example, employees are less likely to pick an external route than an internal one if the organization is larger (Oelrich and Erlebach, 2021). Another potential scope that can be derived in future studies is cultural, race, and geographical context differences. Due to implicit cultural values and variations, specific actions and practices may be regarded as usual in certain cultures but may be perceived as unethical in others. Thus, focusing on the difference in future studies' population and context might produce a deeper understanding of the phenomenon.

Future studies should look into how leadership plays a role in employee whistleblowing. Some leadership styles have been shown to impart a positive influence on whistleblowing, such as authentic leadership (Anugerah et al., 2019; Valentine and Godkin, 2019), ethical leadership (Cheng et al., 2019; Alpkan et al., 2021), and responsible leadership (Akhtar et al., 2020). These leadership styles favour whistleblowing as they are associated with the 'good image' of the leaders and top management personnel. The relationship between whistleblowing and other forms of leadership, like transactional and transformational leadership, has yet to be thoroughly examined. These leadership styles can be reviewed based on the domains of "trust in a leader" and "person-organization fit" that seemingly correspond with whistleblowing among employees. Furthermore, leadership in different contexts can be further studied on the impact of the twin dependent variables of internal and external whistleblowing in the organization.
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