CONTEMPORARY REVIEW OF CORRUPTION RISK STUDIES

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Abstract

This study presents a review of the studies on corruption risk in corporations. It highlights the antecedents of corruption risk, contributes additional knowledge on anti-corruption, and offers some suggestions for future research. Following Tranfield, Denyer, and Smart (2003), a literature search was done on corporate corruption risk and its related terminologies, theories, causes, and effects. In conducting the literature search, top-ranked journals of Science Direct, Springer Link, and Emerald, were used in the Scopus and Google Scholar search engines to find quality papers. The selected online published materials covered the period from 2013 to 2021. The review shows that prior studies have discussed the issue of corruption risk using different measurements and various theories. Also, this study reveals the causes and effects of corruption risk in corporations. This paper suggests a need for future research that will focus on corporate corruption risk, especially in the Malaysian context (Muhamad & Gani, 2020) due to minimal empirical research on corruption issues from a risk perspective. The aspects of corruption risk can become the foundation for effective and proactive community fraud prevention measures that can be implemented by policymakers, regulators, industry players, governments, and non-governmental agencies.

Keywords: Literature Review, Corruption Risk, Anti-Corruption, Private Companies

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1. INTRODUCTION

Corruption exists everywhere around the globe and makes headlines regularly. A few prominent cases of corruption occurred in the world such as Alcatel-Lucent in 2006 (Islam, Dissanayake, Dellaportas, & Haque, 2018), Siemen AG in 2009 (Sari, Cahaya, & Joseph, 2021), 1 Malaysia Development Berhad in 2010 (Durairaja et al., 2019; Muhamad & Gani, 2020), and Finmeccanica an Italian company in 2013 (Krishnamurti, Pensiero, & Velayutham, 2021). These corruption cases result in massive financial and

reputational losses for the concerned companies. Moreover, the continuous occurrences of corruption can erode the confidence of stakeholders and the community as a whole (Zahari & Arshad, 2020). Further, weakened confidence among investors can be detrimental to the economy at large as raising capital will be more difficult due to the higher cost of capital while existing shareholders will disinvest their shares (Zangina, Hassan, & Harun, 2020).

Besides, corruption is the most common type of fraud globally (Association of Certified Fraud Examiners [ACFE], 2020; World Bank Group, 2020). The ACFE (2020) report shows there were 43% cases of corruption around the globe with reported a median loss of USD 11,100 per month. It is also reported that annually, the number of corruption cases is increasing, indicating the deteriorating state of affairs (ACFE, 2018, 2020). Furthermore, corruption is difficult to deal with (Rimšaitė, 2019) because the complexity of most cases requires a painstaking and long period of investigation. Besides, corruption investigations involve burdensome paper-based evidence which makes prosecutions harder due to multiyear investigations and changing legislation of antibribery rules with inconsistent enforcement in different nations (Cuervo-Cazurra, 2016).

Corruption brings about more costs than benefits to both the shareholders as well as the corporations. Tremendous consequences of corruption cases on corporations and their stakeholders have made the public query whether the efforts taken by the respective parties to combat corruption are adequate or lacking. Therefore, this issue has sounded the alarm on the need for improvement in the prevention strategies by all parties and citizens (Rimšaitė, 2019; Sari et al., 2021). Several initiatives and measures can be taken to mitigate corrupt practices in corporations (Quah, 2021; Mahmud, Mohamed, & Arshad, 2022; Peltier-Rivest, 2018; Tunley, Button, Shepherd, & Blackbourn, 2018), and, assessing the level of corruption risk at an early stage could prevent corruption occurrences (Rimšaitė, 2019). At present, a large body of literature is available on corruption practices fraud; however, efforts to systematically review these studies in terms of corruption risk in private companies, develop potential themes, and identify patterns, remain overlooked.

This systematic literature review (SLR) was conducted based on the method introduced by Tranfield, Denyer, and Smart (2003). They evaluated the extent to which the process of a systematic context-sensitive review and research can be applied to produce a reliable knowledge stock. The review process encompasses three steps, i.e., planning the review, collecting relevant articles, and analyzing the findings. It is hoped that this review can help provide a viable solution to the occurrences of corruption in large companies. Ultimately, it is also hoped that this review can enhance the richness, rigor, and relevance of the available findings on corruption risk in the context of private companies as well as can be the foundation for formulating effective corruption risk mitigation strategies that can be applied by regulators, policymakers, government agencies, non-governmental agencies, and industry players.

Hence, the specific objectives of this SLR study are as follows:
1) to highlight an overview of the extent of academic scholarly on corruption risk;
2) to explain the theoretical and conceptual foundations of corruption risk.

To this end, a few research questions were developed to guide this study as follows:

RQ1: How is corruption risk defined and conceptualized in the literature?

RQ2: How is corruption risk studied (i.e., theories and methodologies)?

RQ3: What empirical evidence has been gathered in the academic literature on corruption risk (i.e., causes and effects)?

This paper is structured as follows. The introduction and justification for the review are presented in Section 1. Section 2 explains the relevant literature on the topic of study. Meanwhile, the strategy utilized to conduct this systematic review is described in Section 3. Section 4 includes comprehensive literature findings and discussion, particularly on the determinants of corruption risk as well as the supporting theories that are relevant to the research, corruption risk approaches, the consequences of corruption risk, and the mitigators of corruption risk in corporations. A conclusion is provided in Section 5 with some limitations and recommendations for future research on corruption risk.

2. LITERATURE REVIEW

According to Lopatta, Jaeschke, Tchikov, and Lodhia (2017), corruption is defined as the "illegitimate exchange of resources involving the use or abuse of public or collective responsibility for private ends (i.e., gains, benefits, profits or privileges)" (p. 48). This study addresses the issue of corruption from a risk perspective, namely corruption risk. Corruption risk is considered an interdependent concept but is highly interrelated with corrupt practices (Hosseini et al., 2020). Following a study by Kim and Wagner (2021), the underlying subject of corruption risk is based on the definition of sustainability risk. Further, Hofmann, Busse, Bode, and Henke (2014) define sustainability risk as "a condition or a potentially occurring event that may provoke harmful stakeholder reactions" (p. 168). Also, this study considers the exposure level of corruption risk in companies. Merriam-Webster Online Dictionary defines risk exposure as "the condition of being subject to an effect or influence" ("Exposure", n.d.).

Corruption risk has become a prevalent topic of discussion globally (Kim & Wagner, 2021). Some studies explored the phenomenon of corruption risk based on a country-level perspective (Blanc, Islam, Patten, & Branco, 2017; Issa & Alleyne, 2018; La Rosa, Bernini, & Terzani, 2022) while others from a firm-level perspective (Dang, 2016; Lombardi, Cano-Rubio, Trequattrini, & Fuentes-Lombardo, 2020; Slager, 2017). More and more companies are in danger of becoming involved in corrupt activities as a result of increased exposure to corruption risk (Sovacool, 2021), especially in the construction, oil, gas, and biofuels industries (Koprowski, Krein, Mazzioni, & Magro, 2021). Nevertheless, the level of corruption risk is influenced by several factors that could be classified into three levels: micro, meso,

and macro (Liu, 2016). Besides that, in any organization, shareholders are entitled to be informed about the current level of risk exposure because they own shares in their company's stock (Jaeschke, Lopatta, & Yi, 2018). Therefore, the disclosure of corruption risk measures and anti-corruption strategies can help shareholders and other users of the financial statement to evaluate the health and wealth of a company (Zulvina & Adhariani, 2020).

There are numerous studies on corporate corruption from real data (Chen, Xie, You, & Zhang, 2018; Ellis, Smith, & White, 2020; Hassan, Karim, & Kozlowski, 2022; Wang & Song, 2021) or perceptions (Ha, Thang, & Thanh, 2021; Houqe & Monem, 2016; Jain, Kuvvet, & Pagano, 2017; Sartor & Beamish, 2020; Zakaria & Amriti, 2021). However, very few studies have discussed the corruption phenomenon from the risk perspective in private corporations. It could be because most researchers, government agencies, and accounting professionals have only focused on corruption practices and perceived corruption across several countries and not on corruption risk per se. Extant literature shows that studies are available on corruption risk in the public sector (Abdullah, Daud, & Hanapiyah, 2020; D'onza, Brotini, & Zarone, 2017; Fazekas, Tóth, & King, 2016; Sharma, Sengupta, & Panja, 2019; Villeneuve, Mugellini, & Heide, 2020) however, studies on corruption risk in the private sector are scarce (Liu, 2016). Hence, this review offers a comprehensive analysis of corruption risk in private companies, encompassing all sizes of economies in developed and emerging countries (Heo, Hou, & Park, 2020; Markscheffel & Plouffe, 2021; Martins, Cerdeira, & Teixeira, 2020). The failure of private companies can be a huge threat to the national economy as a whole because private companies invariably constitute the backbone of the economy (Omar & Bakar, 2012). Therefore, a systematic and in-depth review of corruption risk in private companies can be instrumental in understanding the underlying phenomenon as well as in helping formulate anti-corruption measures.

3. METHODOLOGY

This section presents the method that was used to conduct the SLR on corruption risk in private companies. Following the studies by Zainal, Hashim, Ariff, and Salleh (2021) and Farah, Elias, De Clercy, and Rowe (2020), this study applied the three-step procedure of SLR introduced by Tranfield et al. (2003) as follows: 1) planning the review; 2) gathering the articles, and 3) analyzing the findings. It is believed that using this three-step procedure to conduct an SLR can be a reliable evidence base in addition to adding rigor and richness to the findings (Tranfield et al., 2003; Zainal et al., 2021).

3.1. Make a review planning

The initial step was to create a review strategy by looking at the need for the review. The principal focus of this SLR is studying corruption risk.

Hence, all the existing corruption risk literature reviews were assembled in one place. All online journal articles that dealt with corruption risk were organized into a matrix table. This enabled the researchers to conclude that currently, no review exists that has systematically discussed corruption from a risk viewpoint. Next, the researchers gathered as many terms as possible from prior literature reviews on corruption risk and used them in their search. While reading further articles, the researchers collated the keywords in a table. The list of keywords is determined when saturation has occurred (Zainal et al., 2021). In other words, when articles do not provide additional keyword themes, there was no need for subsequent review of the articles.

3.2. Gathering relevant articles

This study gathered relevant articles by using a manual searching procedure with specific conditions of inclusion and exclusion criteria. All materials were picked manually from databases, like Scopus and Google Scholar. Based on the initial list of articles, 101 out of 146 were removed because most studies were either not related to corruption risk in private sectors, were not in the English language, or were not available as full text. The initial search effort using keyword strings described above resulted in 45 potential articles as identified from the databases. The keywords are "corruption risk", and "anti-corruption". The articles were then evaluated to see if they should be included in the literature review. The selection of articles on a proportionate basis with the included and excluded number of articles is shown in Table 1.

Table 1. Number and percentage of included and excluded articles

No.	Database	Total articles	Included	Excluded
1	Scopus	104	32 (30.1%)	72 (69.9%)
2	Google Scholar	42	13 (30.9%)	29 (69.1%)
	Total	146	45	101

Every paper was listed in an Excel file, which included the author's name, title, year published, journal, and other information. Only articles published in English were searched. A total of 45 articles published between 2013 and 2021 were found to be relevant to the researchers' search for corruption risk in private corporations. The reason behind the period ranging from 2013 to 2021 is because this study commenced in 2021 and the online published materials were only available in the Scopus database starting from the year 2013 onwards. Next, the characteristics of each article reviewed were determined. For this review, all selected articles have been published in high-quality journals that are ranked in Scopus CiteScore journal rankings with more significant and rigorous findings (Zainal et al., 2021). Also, these journals are ranked in SCImago Journal Rank as shown in Table 2.

Table 2. List of papers on corruption risk listed in SCImago Journal Rank

| CiteScore rank	H-index	Study
Q1	32–217	Hauser and Hogenacker (2014), Brown and Loosemore (2015), Navot and Cohen (2015), Healy and Serafeim (2016), Lopatta et al. (2017), Slager (2017), Xu and Yano (2017), Saenz and Brown (2018), Tunley et al. (2018), Branco, Delgado, and Turker (2019), Gan and Xu (2019), Masud, Bae, Manzanares, and Kim (2019), Rimšaitė (2019), Williams and Dupuy (2019), Liu, Arthanari, and Shi (2019), Cardoni, Kiseleva, and Lombardi (2020), Hosseini et al. (2020), Lombardi et al. (2020), Owusu, Chan, and Hosseini (2020), Sartor and Beamish (2020), Veselovská, Závadský, and Závadská (2020), Vian (2020), Islam, Haque, Henderson, Jones, and Semeen (2021), Kim and Wagner (2021), Sari et al. (2021), Sovacool (2021), Chen, Chen, Lin, Tang, and Ye (2021), Vu (2021)
Q2	7–58	Krishnamurti, Shams, and Velayutham (2018), Blanc, Branco, and Patten (2019), Vale and Branco (2019), Boon et al. (2020), Muhamad and Gani (2020), Zimelis (2020), Adam and Fazekas (2021), Asare, Duho, Agyenim-Boateng, Onumah, and Simpson (2021), Barros, dos Santos, Melo, dos Santos, and da Silva (2021), Krishnamurti et al. (2021), Mahmud et al. (2022)
Q3	6–17	Kassem and Higson (2016), Stapenhurst, Karakas, Sarigöllü, Jo, and Draman (2017), Monteiro, Viana, and Sousa-Filho (2018), Krishnamurti, Pensiero, and Velayutham (2019), Koprowski et al. (2021)
Q4	9	Peltier-Rivest (2017)

3.3. Analysis of the findings

The last stage of the review involved analyzing the findings. This stage consisted of generating each article's findings. Therefore, a comprehensive and structured Excel database was created, which included the author(s), title(s), year published, research questions, hypotheses, variables, key findings, limitations, and recommended future research and directions. The articles were read independently one by one to find out the main theme. After classifying the same themes together, five general themes emerged, comprising firm-level determinants, approaches (i.e., measurements, elements, and characteristics), underpinning theories, consequences, and mitigators of corruption risk in the context of private sectors. These themes are discussed in the subsequent sections.

4. RESULTS AND DISCUSSION

Based on the general themes, a conceptual framework of corruption risk in the private companies was established in Figure 1 comprising determinants, approaches, consequences, and mitigators of corruption risk. The firm-level determinants influence the level of corruption risk. While different approaches have been captured in the literature to identify or measure corruption risk. Besides that, corruption risk has extensive consequences on firm and managerial performance. Finally, mitigators were determined to control the level of corruption risk in the corporation.

Figure 1. Conceptual framework of corruption risk
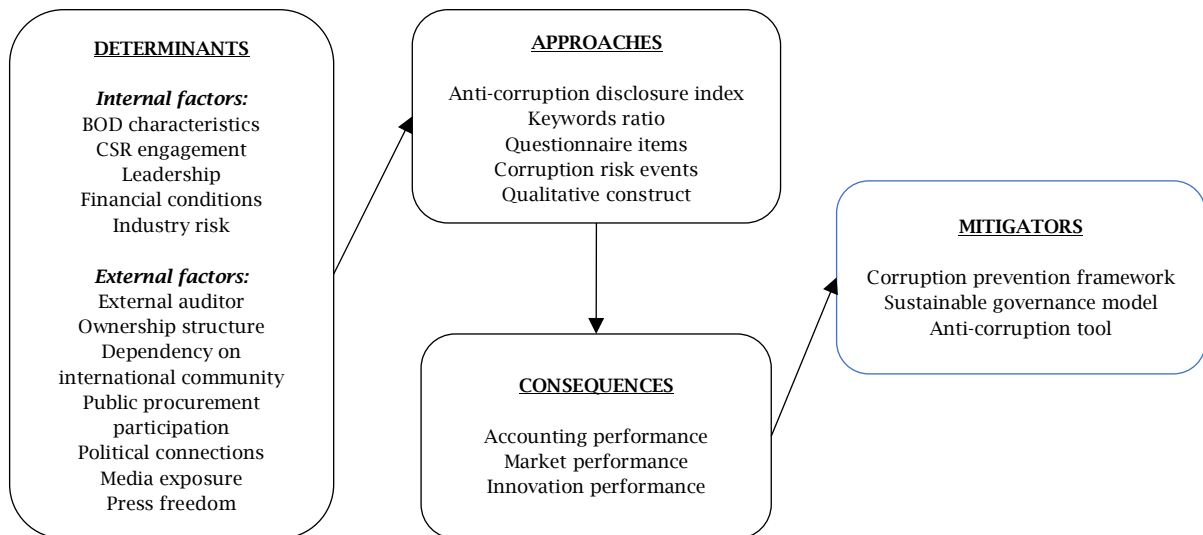
4.1. Determinants of corruption risk

Several firm-level factors are expected to influence corruption risk. Thus, this review gathered all predicting variables and factors that have been tested empirically against the level of corruption risk, as listed in Table 3.

Table 3. Determinants of corruption risk

Determinants	*References*
Board characteristics	Healy and Serafeim (2016), Lopatta et al. (2017), Krishnamurti et al. (2018), Masud et al. (2019), Lombardi et al. (2020), Koprowski et al. (2021)
CSR engagement	Lopatta et al. (2017), Krishnamurti et al. (2018), Lu et al. (2019), Koprowski et al. (2021).
Leadership approach	Peltier-Rivest (2017), Saenz and Brown (2018), Tunley et al. (2018), Vu (2021)
Financial conditions	Lopatta et al. (2017) and Vian (2020)
Industry risk	Blanc et al. (2019) and Koprowski et al. (2021)
External auditor	Healy and Serafeim (2016), Saenz and Brown (2018), Blanc et al. (2019), Koprowski et al. (2021)
Ownership structure	Krishnamurti et al. (2019), Koprowski et al. (2021), Krishnamurti et al. (2021), Sari et al. (2021)
Dependency on the international community	Blanc et al. (2019), Branco et al. (2019), Vale and Branco (2019), Sari et al. (2021)
Participation in the public procurement tenders	Rimšaitė (2019), Mahmud et al. (2021), Sari et al. (2021)
Political connections	Barros et al. (2021) and Koprowski et al. (2021)
Media exposure	Masud et al. (2019)
Press freedom	Krishnamurti et al. (2018), Blanc et al. (2019), Vale and Branco (2019)

4.1.1. Internal factors

Board characteristics are crucial to effective corporate governance. The presence of a board of directors mitigates corruption risk as well as promotes anti-corruption disclosures in the corporations. Healy and Serafeim (2016) reported that the presence of independent directors on the board has a positive and significant effect on the anti-corruption efforts of the largest firms from Forbes' March 2007 Global 2000. Similarly, Lopatta et al. (2017) found that companies with more independent directors on board have a lower level of corruption risk. This is affirmed by Krishnamurti et al. (2018) who found that the function of independent directors on the board is vital in addressing corruption risk, thus, implying that companies with better corporate governance structures have lower corruption risk. Later, based on Masud et al. (2019), revealed that resourceful directors on board with professional expertise have a positive and significant influence on the corporate corruption disclosure of listed firms in Bangladesh. Furthermore, a study by Koprowski et al. (2021) proved that companies with larger sizes of the board are more likely to disclose anti-corruption practices. Further evidence shows that companies with a higher percentage of the audit committee have a higher level of anti-corruption practices.

CSR engagement plays a critical role in ensuring sustainability by promoting shareholder and societal responsibility and transparency. Thus, companies are encouraged to engage with CSR activities in the effort of corruption risk mitigation strategies. Lopatta et al. (2017), confirmed that CSR performance is negatively related to firm-level corruption risk. This evidence-based finding demonstrates that improved CSR performance can efficiently aid in reducing the level of corruption risk in large companies. Furthermore, Lu et al. (2019) discovered that CSR can be used to mitigate corruption risk in the energy sector. In addition, government policies may be required to create a favorable environment for the reduction of corruption risk. The study examines the primary tools of CSR and discusses the impact of CSR on the risk mitigation model in the energy sector, besides offering recommendations for strengthening CSR and reducing corruption. Later, Koprowski et al. (2021) suggested that political connections through government shareholding, positively influence anti-corruption disclosure as evinced by improved CSR.

The leadership approach provides a means of fighting against corruption in the business environment. Peltier-Rivest (2017) studied three prominent cases of pharmaceutical corruption in the USA. The author reveals numerous strategies for preventing and detecting corruption that can be implemented in pharmaceutical companies. The qualitative evidence shows that transformational leadership contributes to preventing corruption and enhances the internal control system. Saenz and Brown (2018) designed an instrument to measure anti-corruption efforts namely the Anticorruption Model Questionnaire (AMQ). They analyzed the level of anti-corruption practices of 26 companies across countries based on the AMQ indicators. Evidence shows that the primary anti-corruption practices disclosed by the targeted companies are a topic related to the leadership and commitment of the senior management. This is affirmed by Tunley et al. (2018) who suggested that executive leadership together with counter-corruption managers should support each other to attain meaningful implementation of anti-corruption techniques. Later, Vu (2021) conducted in-depth interviews with 26 Buddhist-enacted organizational leaders in response to bribery issues at the firm level. The findings revealed that leadership mechanism has a significant influence in tackling bribery issues.

The financial conditions of a firm may influence corruption prevention efforts in corporations. Lopatta et al. (2017) determined the association between firm financial constraints and the level of corruption risk in a sample of 105 worldwide largest firms across countries. The empirical evidence shows that there is a positive and significant influence of financial constraints on firm-level corruption risk. They further suggest a company should review its financial condition regularly as reducing the level of the financial constraint may be an effective business strategy that curtails the corporate corruption risk. Vian (2020) performed a critical review to gain a deeper understanding of the corruption risk phenomenon in the health industry. The finding reported that financial pressure is considered a driver of corruption in the health system. Industry risk presents that companies appear to be the most bribery-prone of the industry which a prone to corruption rated by Transparency International. Blanc et al. (2019) studied the association between industry risk variables and anti-corruption disclosure in large multinational firms. They found a negative and significant influence of industry risk on anti-

corruption disclosures. Similarly, Koprowski et al. (2021) postulated that companies from riskier industries disclose less information related to anti-corruption efforts.

4.1.2. External factors

An external auditor is part of the monitoring mechanisms in the governance structure. The high quality of external auditors increases the effectiveness of monitoring mechanisms in corporations. Evidence from panel country studies, Healy and Serafeim (2016) analyzed the effect of firm-level factors on self-reported anticorruption efforts in the largest exporting companies from developed and emerging countries. The sample was drawn from Forbes' March 2007 Global 2000 with a final sample of 480 firms. The result reveals that companies with higher reported anti-corruption efforts are likely to hire a big-four auditor as part of enforcement and monitoring mechanisms. This is supported by Koprowski et al. (2021), who documented that companies being audited by one of the Big Four auditing firms have a higher level of disclosure of anti-corruption practices. Similarly, according to Blanc et al. (2019), firms with higher reported anti-corruption efforts are located in less corrupt home countries; operate in higher-risk industries; operate in their home country that has stricter anti-corruption laws, to cross-list in the USA, to have been the subject of a recent corruption enforcement action, to use a big-four auditor, and to have a higher percentage of independent directors. On the other hand, Saenz and Brown (2018) revealed that companies with the lowest anti-corruption evaluation scores have not disclosed the results of anti-corruption audits, and no actions have been taken to improve the anti-corruption system.

Ownership structure can be an indicator of the risk of corruption at the corporate level. To strengthen monitoring operations and improve corporate performance, most large organizations employ a split ownership structure or a specific degree of ownership concentration. Furthermore, ownership concentration is seen as one of the most important corporate governance techniques for reducing agency concerns. Institutional ownership, management ownership, government ownership, and foreign ownership, are all examples of the ownership structure in corporations. According to Koprowski et al. (2021), having the government as a stakeholder increases the company's involvement in the fight against corruption, and CSR is supported through anti-corruption initiatives. As a result of government ownership of corporations, more information on anti-corruption efforts is usually made public. Furthermore, Sovacool (2021) discovered that decentralizing ownership of renewable energy projects to a larger number of actors not only spreads benefits more widely but also creates additional anti-corruption safety nets due to increased oversight. Such shared ownership models can help policymakers balance stakeholder interests, assure local actors or civil society participation, and even address inequities and the needs of vulnerable groups.

Dependency on international community pressures or resources is vital in addressing the issue of corruption risk and the effort of fighting against corrupt practices in corporations. The most common characteristics of firms that emerged from this context of study are the membership of the United Nations Global Compact (UNGC), multinationals, and cross-listing. Blanc et al. (2019) examine the effect of UNGC membership on the disclosure of anti-corruption in 105 publicly listed companies across countries. They found that the UNGC membership has a negative influence on anti-corruption disclosure because the UNGC implies a greater concern with compliance and is likely to influence the decision on anti-corruption disclosure. However, Vale and Branco (2019) documented that UNGC member companies disclose a higher level of anti-corruption reporting in large multinationals from emerging countries. This is affirmed by Branco et al. (2019) who concluded that companies that are UNGC members present a higher level of anti-corruption reporting than their counterparts. They also reported that cross-listed companies exhibit a significantly higher level of anti-corruption reporting, while multinationals did not appear to explain differences in anti-corruption reporting of Turkish firms on the Borsa Istanbul 100 index.

Participation in the public procurement tenders increases exposure to corrupt practices incorporation. Rimšaitė (2019) discussed the issues and challenges of corruption risk mitigation in the energy sector around the globe. This qualitative study used a systematic analysis method to examine several cases of corrupt practices in the energy sector, particularly in the utilities section, and to determine specific features of anti-corruption efforts which should be applied. The primary finding demonstrates that corruption exists due to a firm's involvement in public procurement. Later, Mahmud et al. (2022) reviewed a better understanding of the supply side corruption in the private sector. They argued that companies that interact with the public sector are associated with the occurrence of corruption in the private sector. This is evidenced by Sari et al. (2021) who discovers the relationship between coercive factors and the level of anti-corruption disclosure in four ASEAN companies. Based on the empirical findings, they found that higher dependence on government tenders encourages the practice of anti-corruption disclosure.

Political connections have been used in previous research to represent an interesting environment where companies are connected with politicians who have dominant control over most, if not all, corporate decisions. Xu and Yano (2017) revealed that companies have stronger anti-corruption efforts when they are not having political connections, non-state-owned enterprises (non-SOEs), and operate in non-regulated industries. This is affirmed by Koprowski et al. (2021) who found a negative influence of board members with political expertise on the level of anti-corruption disclosure, thus implying that politicians on board are less concerned with anti-corruption reporting. However, Masud et al. (2019) discovered a positive and significant relationship between political connections and corporate corruption disclosure. Similarly, Barros et al. (2021) disclosed a positive and significant impact of corporate political connection on the extent of voluntary anti-corruption disclosure, thus, increasing their legitimacy after corporate corruption scandals.

Media exposure encourages corporate anti-corruption disclosure in the industry. For instance, Masud et al. (2019) discovered the relationship between media exposure and corporate corruption disclosure (CCD) is positive and statistically significant. This implies that the media is an important factor in promoting CCD, thus supporting the stakeholder theory. Similarly, Blanc et al. (2019) studied cultural secrecy and anti-corruption in large multinational companies. They discovered a positive and significant influence of media exposure on anti-corruption disclosure. On the other side, press freedom is perceived to influence the level of corruption risk. A prior study by Krishnamurti et al. (2018) examined the impact of corporate social responsibility (CSR) on firm-level corruption risk in developed and emerging countries. The finding reveals that press freedom has a positive and significant impact on anti-corruption efforts in a developed market, thus suggesting that companies having a strong degree of press freedom have lower corruption risk.

4.1.3. Underpinning theories

In terms of research theories used, prior corruption risk studies were analyzed in terms of the factors that explain the variability of corruption risk as well as the anti-corruption measures. A single theoretical lens is largely being used in the literature. Based on the empirical studies, most academic scholars have employed the stakeholder theory (Blanc et al., 2019; Lopatta et al., 2017); the agency theory (Koprowski et al., 2021), and the institutional theory (Hauser &

Hogenacker, 2014; Sari et al., 2021). In further detail, Koprowski et al. (2021) adopted the agency theory to examine corporate governance and political connections related to anti-corruption practices. Based on the agency theory, corporate governance mechanisms reduce agency conflicts and enhance the monitoring system in corporations. Sari et al. (2021) determined that the extent of anti-corruption efforts in four ASEAN member countries is positively influenced by government dependence and foreign ownership, which supports the coercive isomorphism tenet of institutional theory.

A combination of theories is crucial to explain the relationship between predictor variables and explained variables. For instance, Vale and Branco (2019) explored several factors which influence anti-corruption reporting in large multinationals by integrating the legitimacy and stakeholder theories. They further explained that both theories complement each other since a company needs to obtain support from society as well as its key stakeholders to ensure its survival. Besides that, Masud et al. (2019) examine the effects of professional expert directors, political connections, and corporate media visibility on corporate corruption disclosure with the adoption of three theories mainly agency, stakeholder, and resource dependence theories. Later, Kim and Wagner (2021) integrate the attribution theory and signaling theory for gaining a better understanding of when and how a corruption risk materializes, and the combined approach will aid to explain how and why corruption risk causes harm to a target corporation. A list of theories is shown in Table 4.

Table 4. Underpinning theories

Theory	References
Agency theory	Masud et al. (2019), Krishnamurti et al. (2021), Koprowski et al. (2021), Masud et al. (2019)
Stakeholder theory	Blanc et al. (2019), Masud et al. (2019), Lopatta et al. (2017), Vale and Branco (2019)
Legitimacy theory	Branco et al. (2019) and Vale and Branco (2019)
Institutional theory	Hauser and Hogenacker (2014) and Sari et al. (2021)
Political sponsorship theory	Krishnamurti et al. (2018) and Barros et al. (2021)
Crony capitalism	Barros et al. (2021)
Attribution theory	Kim and Wagner (2021)
Signaling theory	Kim and Wagner (2021)
Resource dependency theory	Masud et al. (2019)
Fraud diamond theory	Peltier-Rivest (2017)

4.2. Approaches for identifying corruption risk

Prior scholars have applied various approaches to identify corruption risk in corporations. Based on the quantitative studies, there are four main constructs used as approaches in determining corruption risk, mainly anti-corruption disclosure

index, anti-corruption questionnaires, keywords content analysis, and corruption risk events. Furthermore, in qualitative studies, prior studies reveal various characteristics of corruption risk in corporations. The next subsection explains each construct of the corruption risk approach and the list of approaches is presented in Table 5.

Table 5. Different approaches to corruption risk

Approach	Author
Anti-corruption disclosure index	Healy and Serafeim (2016), Lopatta et al. (2017), Krishnamurti et al. (2018), Blanc et al. (2019), Vale and Branco (2019), Krishnamurti et al. (2019), Branco et al. (2019), Asare et al. (2021), Barros et al. (2021), Krishnamurti et al. (2021), Owusu et al. (2020), Sari et al. (2021)
Keywords ratio	Koprowski et al. (2021), Masud et al. (2019), Gan and Xu (2019), Chen et al. (2021)
Questionnaire items	Hauser and Hogenacker (2014) and Saenz and Brown (2018)
Corruption risk events	Xu and Yano (2017) and Kim and Wagner (2021)
Qualitative approach	Slager (2017), Hosseini et al. (2020), Sovacool (2021)

Anti-corruption disclosure index is widely applied in the research. Most of the index scoring is designed by international guidelines developed by

Transparency International (TI) and Global Reporting Initiative (GRI). Earlier, Healy and Serafeim (2016) captured anti-corruption ratings based on TI's

anti-bribery code which comprise three categories: strategy (valued at 10 points), policies (valued at 15 points), and management systems (valued at 25 points). This is followed by other studies that assessed corruption risk based on an anti-corruption index designed by Transparency International (TI, 2016) which includes 13 item questions (Krishnamurti et al., 2018; Vale & Branco, 2019). Similarly, Krishnamurti et al. (2019, 2021) used six bands of TI's Anti-Corruption Index with a score ranging from "A" (very low level of corruption risk) to "F" (critical level of corruption risk). Whereas, Asare et al. (2021) conducted an empirical study on the link between anti-corruption disclosure and firm financial performance of 27 firms in five African countries. They used a document of Global Reporting Initiative (GRI, 2018) to measure anti-corruption disclosure. Similarly, Sari et al. (2021) adopted the GRI code of G4 Anti-corruption indicators to assess the dependent variable of anti-corruption disclosure.

Keywords ratio is increasingly used in the literature. A prior study by Gan and Xu (2019) studied the relationship between the anti-corruption campaign and corporate innovation of Chinese listed companies between 2006 and 2012. They measured the anti-corruption campaign by counting the number of articles in the newspaper of the provincial Communist Party of China that promote anti-corruption or criticize corruption. They adopted the Duxiu database to search related newspaper articles with specific keywords, namely, anti-corruption, corruption, and honest and clean government. Similarly, Chen et al. (2021) examined the impact of anti-corruption on green R&D investment in 14 energy-intensive industries in China. They measured the anti-corruption variable by counting the percentage of provincial anti-corruption-related articles with the Chinese keywords of anti-corruption and corruption in the official newspapers. Koprowski et al. (2021) identified keywords relating to corruption risk measures in the Disclosure of Anti-corruption Practices. They counted the percentage of keywords over the number of report pages from available sustainability reports.

Questionnaires items also determine the phenomenon of corruption risk. Earlier, a study by Hauser and Hogenacker (2014) examined the effect of the organizational environment on anti-corruption at the firm level. They conducted a survey which was participated by 510 companies in Swiss. The anti-corruption variable is measured by two items which are providing regular training and signing a written declaration. Furthermore, Owusu et al. (2020) examined the effectiveness of anti-corruption measures (ACM) in the construction industry and infrastructure-related projects. ACM comprises six constructs, namely, administrative, compliance, probing, promotional, reactive, and regulatory measures. Corruption risk events are rarely being adopted as a basis of measurement due to the limitation of available data in the field. Kim and Wagner (2021) adopted a unique measurement of corruption risk which is different from others. Interestingly, they determined corruption risk based on four events, i.e., trigger, investigation, regulatory, and resolution of corruption practices. These corruption risk events were collected from the Wall Street Journal (WSJ) news articles database with a final sample of 315 corruption risk events from 285 WSJ announcements.

In qualitative studies, few scholars have identified various concepts and characteristics of corruption risk. A prior study by Slager (2017) explored the construction of the anti-corruption risk concept in the private sector. Based on the findings, they reported that there are two sets of discourse on anti-corruption, mainly discourse on corruption prevention and discourse on corruption detection. They further stated that several elements related to anti-corruption risk factors emerged from the discourse, such as risk producer and risk manager. Meanwhile, Hosseini et al. (2020) revealed four major characteristics of corruption risk in the Iranian construction industry: 1) procedural violations in awarding contracts; 2) misuse of contractual arrangements; 3) neglect of project management principles, and 4) irrational decision-making. Later, in the low-carbon and net-zero energy sectors, Sovacool (2021) derived eight different types of corruption risk characteristics, i.e., diverting public resources for private means, artificially inflating renewable energy costs, inefficiently allocating contracts, tender rigging, allowing bribery or mismanagement, theft of energy equipment, unlawful tactics or land grabbing and tax evasion.

4.3. The consequences of corruption risk

This section discusses prior research findings on the effects of corruption risk on companies. Based on the selected articles, very few studies have addressed the effects of corruption risk. Only six of the 45 studies have examined the consequences of corruption risk on firm performance from various measurements, such as stock market reaction, innovations, profitability margin, and sales growth. The list of corruption risk consequences is shown in Table 6.

Firm accounting performance is extensively being used in the literature to address firm financial performance. There are various methods to measure firm accounting performance, such as sales growth, return on asset (ROA), return on equity (ROE), Z-score value, and profitability, to name a few. Healy and Serafeim (2016) analyzed the firm-level factors and effects of Transparency International's ratings of self-reported anticorruption efforts. Also, this study adopted sales growth and profitability to measure the firm subsequent performance of the 480 sample companies in various countries. They reported that companies in high corruption geographic segments have a negative relationship between sales growth and profitability change. Later, Asare et al. (2021) determine the influence of anti-corruption disclosure on firm financial performance measured by profitability and financial stability. They revealed that corporate corruption reporting reduces the financial stability of extractive firms in Africa.

Firm market performance can be measured through several methods such as Tobin's Q value, stock market liquidity, and stock return volatility. Based on the literature, later, Krishnamurti et al. (2021) examined the impact of corruption risk score on firm market performance in terms of stock market liquidity and stock return volatility.

The findings reveal that companies with a low corruption risk level experience a more dramatic decline in stock volatility compared to companies with a high corruption risk level. In terms of stock market liquidity, they argued that companies with low corruption risk scores experience high stock liquidity as compared to companies with a high corruption risk score. In a similar vein, Kim and Wagner (2021) studied the effect of corruption risk on firm market performance in the form of stock price reaction in the USA. Based on a sample of 315 corruption risk cases, the finding reveals that the stock price reacts inversely to the issues of corruption risk in the business supply chain.

Corporate innovations have received growing attention among academic scholars. For example, Gan and Xu (2019) examine the effect of China's anti-corruption campaign on the corporate R&D

investment of the Chinese A-share listed companies in China. The measurement of R&D investment is proxied by two methods mainly the ratio of R&D expenditures to the firm's annual income and the ratio of R&D expenditures to the firm's total asset, then multiplied both values by 1000. The empirical evidence shows that China's anti-corruption efforts are positively linked with corporate innovation. Later, Chen et al. (2021), investigate the effect of anti-corruption efforts on enterprises' green innovation in China's energy-intensive industries. Based on the panel data of Chinese listed enterprise from 2009 to 2017, they postulated that anti-corruption campaign has a positive and significant relationship with enterprises' green innovation, thus implying that more efforts of anti-corruption campaign enhance green innovation in the respective industries.

Table 6. Constructs adopted as consequences of corruption risk

Consequences	*References*
Firm accounting performance	Healy and Serafeim (2016) and Asare et al. (2021)
Firm market performance	Kim and Wagner (2021) and Krishnamurti et al. (2021)
Corporate innovation	Gan and Xu (2019) and Chen et al. (2021)

4.4. The mitigators of corruption risk

This section discusses prior research findings on the several initiatives of corruption risk mitigation

in the corporation. Most studies are based on qualitative research design and conducted in various countries and industries. A list of mitigators is presented in Table 7.

Table 7. Constructs adopted as mitigators of corruption risk

Mitigator	*References*
Corruption prevention framework	Peltier-Rivest (2017), Slager (2017), Stapenhurst et al. (2017), Tunley et al. (2018), Rimšaitė (2019), Boon et al. (2020), Muhamad and Gani (2020), Vian (2020)
Sustainable governance model	Cardoni et al. (2020) and Lombardi et al. (2020)
Anti-corruption tools	Navot and Cohen (2015), Kassem and Higson (2016), Williams and Dupuy (2019), Liu et al. (2019), Veselovská et al. (2020), Adam and Fazekas (2021)

The corruption prevention framework is the most common area of study among scholars. This framework comprises a set of activities and initiatives which contributes to controlling the level of corruption risk in the business environment. Peltier-Rivest (2017) adopted the fraud diamond theory to explore three cases of pharmaceutical corruption in the USA. The author highlighted that pharmaceutical companies depend aggressively on marketing activities to attain the loyalty of prescribing doctors and patients, which in turn involves an illegal twist into corrupt practices. The qualitative evidence reveals that companies should include corruption risk assessment and proper implementation of anti-corruption controls in designing an effective pharmaceutical corruption framework. Another study by Tunley et al. (2018) developed a corruption prevention framework by utilizing Clarke's situational crime prevention techniques. They designed the framework with some differences that focused primarily on control and vigilance bureaucratic to improve organizational resilience. Later, Vian (2020) reviewed several interventions for fighting corruption in the health sector. She pointed out various important anti-corruption strategies that can mitigate corruption risks such as insurance fraud control programs, community monitoring, and civic participation.

The sustainable governance model is vital for the sustainable development goals (SDGs) era. The discussion on these themes and their connections

with corruption is in infancy. Monteiro et al. (2018) observed academic research on corruption in the supply chain management (SCM) from 2005 to 2016 and proposed more research agenda to gain a deeper understanding of how corruption interacts with SCM and the SDG's framework. Lombardi et al. (2020) adopted the Gioia methodology in the case study analysis to determine the role of the board of directors in line with the anticorruption Spanish legislation (Organic Law 1/2015). Based on the findings, they defined the sustainable corporate governance model as an avenue of anti-corruption strategies for Spanish companies. Similarly, Cardoni et al. (2020) used a qualitative study method with a single-case study of an Italian steel company. They proposed an integrated approach of a sustainable governance model to fight against corruption. They adopted the meta-management framework introduced by Asif, Joost de Bruijn, Fisscher, and Searcy (2010) and Asif, Searcy, Zutshi, and Ahmad (2011) to explain the integration process of ESG issue and to design the interaction between anti-corruption practices and the company's ESG strategy.

Anti-corruption tools are likely to be at best of preventing corruption in the organization. Veselovská et al. (2020) analyzed four case studies of different size of companies following the ISO 37001. Using a qualitative approach, they designed an innovative tool to address the issue of bribery in the Slovak Republic. Based on the qualitative evidence, they proposed a comprehensive

and innovative Bribery Risk Index (BRI) tool to assess the level of bribery risk in different sizes of the organization. Also, the BRI tool can be used to compare the level of bribery risk between companies regardless of their industry and size. Later Adam and Fazekas (2021) reviewed the key applications of information and communication technology (ICT) tools against corrupt practices. Based on the analysis, they captured several types of ICT-based anti-corruption efforts, such as digital public services, crowdsourcing platforms, whistleblowing tools, transparency portals and big data, and artificial intelligence. These tools support anti-corruption initiatives by inducing greater public scrutiny in several ways.

5. CONCLUSION

Corporate corruption can severely hit the economic growth of a country. When organizations involve in corruption, their performance and reputation would be endangered. While prior literature reviews have discussed more on real dara or perceived corrupt practices at the firm level, this paper is among the earliest works to focus on corruption from the risk perspective. Efforts to mitigate corruption risk are an important academic research topic, and for this, anti-corruption practices in private sectors need to be examined and reviewed.

This paper discussed corruption risk in a private corporation through a systematic literature review. In this literature review, articles are searched based on specified inclusion and exclusion criteria such as full-text availability, language, period of publication, and topic of discussion. In response to *RQ1*, a conceptual framework of corruption risk also emerged. Based on the specific objectives, and answering *RQ2* and *RQ3*, it is concluded that the firm-level factors of corruption risk are classified into two: internal and external factors. Nevertheless, corruption risk may be measured through numerous approaches, the most widely used among academic scholars is the anti-corruption disclosure index introduced by the Transparency Initiative which is used as a proxy of corruption risk. Further, this review paper presents the consequences of corruption risk on firm performance in the form of accounting, market, and R&D investment performance. Hence, there is a need to mitigate and control the level of corruption risk through the implementation of an effective corruption prevention framework, sustainable governance models, and the adoption of innovative tools.

There are, however, some limitations in this paper review. First, it is a relatively small number of available empirical research in the area of the corruption risk phenomenon. The findings may be biased for generalization due to restrictions in the sample size. Thus, more empirical research is required to gain a better understanding of the corruption risk phenomenon. Second, to this end, empirical research on corruption from a risk perspective in Malaysia is limited. Third, is the fact that all reviewed papers did not address a few governance variables such as audit committee, CEO attributes, and internal audit. Fourth, this paper has focused primarily on the corruption risk phenomenon at the firm level that is still in its beginning.

Despite the limitations, this study contributes to the corpus of knowledge in the area of corruption risk. Research on corruption risk in the private sector is still evolving. This study helped to determine gaps in research or the areas related to corruption risk that is still underexplored in the corporations. First, future studies can investigate other firm-level factors that can be appropriately applied toward mitigating corruption risk in the private sector. Second, numerous studies appear to have not sufficiently covered the effect of the corruption risk phenomenon. Thus, future research might explore the impact of corruption risk to identify the mechanisms by which uncertainty in the business environment may be reduced. Third, such knowledge and ideas derived from this paper can provide more relevant information on corruption risk mitigation efforts as well as the prevention of corrupt practices in the private sector. Fourth, there is a scarcity of research on firm-level corruption risk in developing countries like Malaysia (Muhamad & Gani, 2020) and the findings captured from the literature in developed countries are not suitable at par with the companies of emerging countries due to differences in corporate structure and legislation. Therefore, in future research works, the selection of samples can be drawn from different developing countries for an international comparison of the phenomenon of corruption risk (Sari et al., 2021). It is believed that this paper review can provide a better understanding of this underlying research area and trigger new ideas for future studies.

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