South African Journal of Business Management
ISSN: (Online) 2078-5976, (Print) 2078-5585

The relationship between employee-related disclosures and working days lost because of labour strikes

Author:
Thando Loliwe[1]

Affiliation:
[1]Department of Accounting and Finance, School of Business, University of Dundee, Dundee, United Kingdom

Corresponding author:
Thando Loliwe,
tloliwe001@dundee.ac.uk

Dates:
Received: 06 Apr. 2024
Accepted: 31 Mar. 2025
Published: 16 May 2025

How to cite this article:
Loliwe, T. (2025). The relationship between employee-related disclosures and working days lost because of labour strikes. *South African Journal of Business Management, 56*(1), a4639. https://doi.org/10.4102/sajbm.v56i1.4639

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Purpose: This paper aimed to analyse the impact of labour strikes and industry variation on the level of employee-related disclosures (ERD). It argued that the levels of ERD disclosed by companies in the chemical, manufacturing, forestry, mining, construction, and transport industries differ in accordance with the working days lost and the classification of labour strikes they are affected by.

Design/methodology/approach: The integrated reports, consisting of annual reports and sustainability reports, of 81 companies listed in 6 sectors on the Johannesburg Stock Exchange from 2010 to 2018 were sampled.

Findings/results: The study found that companies in the sampled industries respond to protracted labour strikes as per their industry disclosure norms. Further, the results indicate that the level of ERD disclosed by a company operating in the mining industry that is affected by a labour strike is significantly different from that of a company not affected by a labour strike, whether it is within the mining industry or in other industries.

Practical implications: Companies' response to labour strikes using the ERD varies in accordance with stakeholder power and assumed rights. Moreover, institutions that issue awards for excellent Corporate Social Responsibility (CSR) may award them to unworthy recipients.

Originality/value: This study examines the moderating role of labour strikes on the association between companies' industry and level of ERD.

Keywords: employee-related disclosures; industry differences; labour strikes; normative isomorphism; stakeholder theory.

Introduction

Lonmin's 2019 sale to Sibanye-Stillwater, following shareholder approval in December 2017, was influenced by escalating costs, financial constraints, and strained stakeholder relations (Dyer, 2017), including the aftermath of the Marikana massacre and subsequent labour strikes (Baskaran, 2021). Despite this turbulent history, Lonmin received a sustainability reporting award from PricewaterhouseCoopers (PwC) in 2015 (Cornish, 2015). This award is given to companies whose annual reports, sustainability reports and websites demonstrate clear business, social and environmental purposes, impacts and processes that are 'mindful of broader stakeholder needs and how value creation by businesses is shared with' all (PwC, 2019, p. 4). However, the contrasting research found Lonmin's reports to dissociate itself from responsibility and to deflect the public's attention to other positive information (Alves & Branco, 2020), which is consistent with Gray's (2007) critique of the inherent difficulty in balancing sustainability disclosures with broader capitalist business objectives. The existing literature further supports this observation, with some researchers characterising sustainability reporting as a mere façade (Merkl-Davies & Brennan, 2017; Suchman, 1995).

Lonmin's sale was partly attributed to the consequences of previous protracted labour strikes (PLSs). While the *South African Labour Relations Act (LRA) 66 of 1995* does not define a protracted strike, Section 213 of the LRA defines a labour strike as:

> '[*T*]he partial or complete concerted refusal to work, or the retardation or obstruction of work, by persons who are or have been employed by the same employer or by different employers, for the purpose of remedying a grievance or resolving a dispute in respect of any matter of mutual interest between employer and employee …'

Protracted is defined as 'lasting for a long time or made to last longer than necessary' (Cambridge Dictionary, n.d.). In this study, a PLS is defined as a strike exceeding the average duration of strikes within the relevant reporting period.

This study investigates the relationship between labour strikes and employee-related disclosures (ERD), using Lonmin's sale as a case study within six South African industries: chemicals, manufacturing, forestry, mining, construction and transport. Lonmin was listed on the South African Johannesburg Stock Exchange (JSE) under the mining sector. This sector has seen a fair amount of research (Alves & Branco, 2020; Carels et al., 2013; Dube & Maroun, 2017); hence, this study considers the mining sector and other sectors on the JSE. The impact of labour strikes on social disclosures in annual reports has been previously discussed, with studies examining the use of voluntary disclosures to mitigate political costs and regulatory pressures (Trotman, 1979); the role of ERD within broader social reporting (Guthrie & Parker, 1989); stakeholder engagement (Unerman & Bennett, 2004); the limitations of annual reports in fully representing employee perspectives (Archel et al., 2009); and the strategic use of accounting disclosures for creating positive images by companies (Li et al., 2018; Maltby & Tsamenyi, 2010). While prior research suggests a negative (De Villiers & Van Staden, 2006) or positive (Dube & Watson, 2017) relationship between strikes and disclosure levels, this study examined this relationship across multiple industries rather than focussing on a single sector.

From a stakeholder theory perspective, the rupture of employer-employee relations during labour strikes increases the importance of balancing stakeholder power and rights in resolving conflicts and achieving organisational objectives. Deegan's (2007) stakeholder theory distinguishes between an ethical (normative) branch and a positive (managerial) branch. The ethical branch posits fair treatment for all stakeholders, irrespective of their relative power (Deegan, 2007). Existing literature demonstrates this branch through the application of managerial discretion and professional judgement in determining the content and extent of voluntary disclosures in accounting reports (Deegan, 2007; Hope & Wang, 2018; Loliwe, 2016). Hence, employees do not control the reporting process.

The managerial branch posits that management prioritises powerful stakeholders (Nasi et al., 1997). Loliwe (2016) and Kent and Zunker (2017) examine the various forms of employee power, such as employee share ownership schemes and concentrated employee representation. Given employees' crucial role in organisational operations (Loliwe, 2016), strikes represent a powerful tactic to influence management. Strikes negatively impact companies through lost sales, share price declines, production losses and reputational damage (Lindblom, 1993). Conversely, Delaney (1994) argues that management sometimes strategically uses a lack of funds to not meet labour or union demands, resulting in strikes or bankruptcy that reduces labour costs and increases profits. Therefore, a period of strike may favour management, employees, or both.

This study also employs institutional theory, focussing on normative isomorphism – the tendency of organisations to conform to industry norms in their policies, practices, and disclosures (DiMaggio & Powell, 1983). Normative isomorphism is driven by shared organisational values and influential actors within an industry (Markov, 2013; Omran & El-Galfy, 2014), potentially including resource constraints aimed at profit maximisation. Consequently, understanding industry values and operational contexts can provide valuable insights into collective organisational behaviour. Farooq and Maroun (2017) argue that many companies are experiencing certain pressures to issue accounting reports that are similar in structure and information disclosed, particularly among listed companies. This standardisation may be attributed to the centralised governance model inherited from pre-1994 South Africa (Maree, 2009), fostering collaboration among organisations with shared interests (Campbell, 2007; Isaacs et al., 1997), as exemplified by bodies such as the National Economic Development and Labour Council and various industry associations. Furthermore, government legislation, including the LRA, facilitates the formation and operation of these groups.

Consequently, readers may expect a flow and exchange of information. Shubham and Murty (2018) found that industrial associations encourage members to adopt similar processes and practices through activities such as standard operating procedures and self-monitoring. Normative isomorphism is crucial to explain industries' collective behaviour, especially when seeking legitimacy, signalling value propositions, or hiding social liability from the public. Based on this reasoning, this study argues that the levels of ERD disclosed by companies that are affected by PLSs are significantly different from those companies in another industry.

Literature review

Research on labour strikes

The Department of Labour annually publishes the Industrial Action Report (hereafter called the Report). The information these reports contain is broad, but they are useful because they outline the causes of labour strikes, such as wage disputes, grievances, working conditions, retrenchments, longitudinal trends and the number of work stoppages in South Africa annually (DoL, 2012). For example, the 2012 Report highlights the role of National Union of Mineworkers (NUM) and rival unions in the 2012 mining sector strike, while downplaying the underlying grievances of employees, the actions of the employers, and Chamber of Mines in escalating tensions. Hence, researchers such as Archel et al. (2009) and Mäkelä (2013) warn users about reporting bias against employees that usually occurs because of power imbalances in most reports. For instance, the significant omission was that the 2012 strike at Lonmin led to the killing of 44 of its Marikana miners by the police (SAFLII, 2014).

In the global context, international comparison studies have been done on working days lost (Monger, 2020; Stokke & Thornqvist, 2001). However, Lyddon (2007) rejects these studies because of inaccuracies and inconsistencies. Therefore, this study focussed only on South Africa. In South Africa, the literature on the number of working days lost by companies (or industries) mainly focusses on longitudinal trends, duration, and causes of disputes and labour strikes (Jacobs & Yu, 2013). Researchers recently examined the impact of labour strikes on the economy and shareholder value (Kennedy, 2018; Williams, 2017). An important study by Russo et al. (2019) developed a framework to explain pre-existing economic and legal conditions, including mechanisms for resolving disputes associated with starting and preventing labour strikes. Their framework highlights the interaction between workers, the industry they are employed in and the macroeconomic context of a country as associated with quick resolutions or prolonging of strikes.

Other researchers have examined PLSs, which makes this topic not new in academic literature. For instance, firstly, there was a labour strike in 1921 for 80 days in West Coast Maritime (Brown, 1950); secondly, the Major League Baseball players had a strike that lasted for 50 days in 1981; thirdly, Delhi University in the 1990s had two strikes that lasted 110 and 90 days, respectively (Altbach, 2003); fourthly, the health worker strikes in Kenya in 2017 had labour strikes that lasted 100 and 150 days (Waithaka et al., 2020); and lastly, in 2014, the platinum sector in South Africa experienced a 5-month-long labour strike. Therefore, this study first seeks to establish whether the levels of ERD by companies within the same industry and in other industries differ based on the labour strike's classification (i.e. PLS and no PLS) and thus the following were hypothesised:

H1: *The level of ERD disclosed by a company that is affected by a protracted (i.e. longer than necessary) labour strike is significantly different from a company in the same industry that is not affected by any labour strike.*

H2: *The level of ERD disclosed by a company that is affected by a protracted (i.e. longer than necessary) labour strike is significantly different from a company in another industry that is not affected by any labour strike.*

Why South African companies?

This study focusses on South African companies for several compelling reasons. Firstly, the JSE is the largest in Africa and ranks 17th globally by market capitalisation (SSE, n.d.), highlighting South Africa's significant role within the top 40 global economies (UN, 2024). Secondly, South Africa boasts a high level of unionisation, ranking 4th in Africa and 25th globally in 2019 (ILO, 2022). This high unionisation rate, while potentially leading to labour strikes and work stoppages (Ashenfelter & Johnson, 1969; Webster, 2022), also underscores the importance of labour relations in resolving disputes and addressing grievances (LRA, 1995; ILO, 2022).

Furthermore, the JSE's implementation of the Socially Responsible Investment (SRI) Index in 2004, later merged with the FTSE Russell Environmental, Social and Governance (ESG) index in 2015, emphasises the growing significance of ESG considerations in investment decisions (JSE, n.d.). Research suggests that companies with strong ESG scores attract investors because of their lower risk profiles (Sgammini, 2023; Tripathi & Kaur, 2020). Therefore, examining labour value creation, risk management and stakeholder relationships in South African companies is crucial, given their historical impact on economic and social stability (Marais et al., 2022).

Employee-related disclosures

'Human capital' (HC) as a concept has existed since Adam Smith's time (1776). According to Goldin (2016), 'human capital is the stock of skills that the labour force possesses'. Although the accounting profession, via the International Accounting Standards Board's (IASB) conceptual framework, has desisted from putting a value on human beings because of their elusive manner of being controlled and the difficulty they may present when measuring (Eckstein, 2004), except for costs paid to people that are directly attributable to the creation of assets, as explicitly addressed in IAS 38 Intangible Assets and other accounting standards. Some researchers, including Wößmann (2003), and sustainability standards-setting bodies, such as the Sustainability Accounting Standards Board, have devised methods to measure HC. These methods differ based on what is being measured, why they are measuring what they are measuring and their data requirements. The second focus of this study is not to measure HC but to examine whether labour strikes have a moderating effect on the relationship between an industry variable and HC reporting. Corporate Social Responsibility (CSR) literature uses several terms for HC reporting. For example, Guthrie and Parker (1989) called it human resources disclosures. The following paragraphs demonstrate that regardless of the title of these disclosures, they cover similar subjects that concern employees.

In the early 2000s and before, HC reporting was driven by laws (Buhmann, 2006). However, McCracken et al. (2018) found that most companies increase their HC reporting to go beyond their statutory duties and to broader employee-related issues. Furthermore, Lim and Mali (2022) compared the HC information of companies in the United Kingdom and South Korea; they found that South Korean companies have higher levels of HC reporting on their annual reports than UK companies. Therefore, they suggest that South Korean companies seek to legitimise their interactions with their employees to the users of their annual reports (Lim & Mali, 2022).

Other research on HC focusses on the strategies companies apply after labour strikes and assesses labour strikes as one of the factors that influence social disclosures (Alves &

Branco, 2020; Archel et al., 2009; Dube & Maroun, 2017). For instance, Loliwe (2016) found that labour strikes do not significantly affect social disclosures. Another study conducted by Alves and Branco (2020) found that a company's labour unionisation influences managers to publish CSR information to gain positive social perceptions. They also found that Lonmin increased the disclosure of health and safety and labour relations information in its reports (Alves & Branco, 2020). In contrast, Bulut-Sürdü et al. (2020) found that employee training was the most disclosed item among HC disclosures in corporate reports of insurance companies in Turkey. Therefore, it appears that companies operating in specific industries may prioritise different information to be reported as compared to companies in other industries.

Dube and Maroun (2017) investigated how mining companies use CSR disclosures in their integrated reports to preserve credibility in their constituents' minds after violent strike action has threatened the companies' legitimacy. Their study focussed on the integrated reports for 2011, 2012 and 2013 of JSE-listed mining companies. They found that South African platinum mining companies provided additional CSR disclosures, including information about the strike at Lonmin that led to the Marikana massacre (Dube & Maroun, 2017). Prior to the earlier-mentioned study, some researchers found a significant relationship between the industry in which a company operates and its social disclosures (Boesso & Kumar, 2007; Cuganesan et al., 2010). However, can this relationship be influenced by different durations and classifications of labour strikes? This study, secondly, seeks to confirm whether ERD differs between companies operating in the chemical, construction, forestry, manufacturing, mining and transport industries in relation to durations and classifications of labour strikes they had, and the following was hypothesised:

> ***H3*: *A labour strike and its classification significantly moderate the relationship between an industry in which a company operates and its ERD.***

Other perspectives that explain social disclosures

As a part of the social disclosures, Guidry and Patten (2012) discuss the signalling effect, which means that when a company has better environmental performance, it will disclose more information; in contrast, when a company is performing poorly, management may decide not to disclose negative information about the company or themselves. Thus, what is disclosed or not disclosed differs from what has occurred, which leads to information asymmetry. Stiglitz (2003) defines information asymmetry as the condition where certain information is known to some parties involved but not to all. De Villiers and Van Staden (2006) confirm that certain companies withheld information in their study. The new trend is to apply information asymmetry arguments to social and environmental studies, including labour strikes (García-Sánchez & Noguera-Gámez, 2017; Nguyen et al., 2019). Cormier et al. (2009) and García-Sánchez and Noguera-Gámez (2017) and Nguyen et al. (2019) found that when companies disclose social and environmental information, information asymmetry is reduced. Moreover, many studies have been written about the signalling effect. Hetze (2016) argues that CSR reporting impacts the CSR reputation of a company. Nonetheless, in practice, disclosures alone do not guarantee the ongoing survival of a company, as we have seen with Lonmin.

Methodology

Research method

Firstly, to establish whether there are differences in the levels of ERD by companies that had PLSs and those that did not have protracted strikes within the same industry (i.e. $\mathbf{H_1}$) and in other industries (i.e. $\mathbf{H_2}$), this study applied the Mann–Whitney U formula. In the formula, U_1 represents the Mann–Whitney U test outcome for companies with PLSs in group 1 that was compared with the Mann–Whitney U test outcome for those companies without PLSs in group 2 in the same or other industries. Furthermore, n_1 and n_2 represent the number of companies in group 1 and group 2, respectively. R_1 represents the sum of the ranks for companies in group 1. The reasons for applying this test are that some groups had fewer than 15 observations, significant outliers, and were not normally distributed (Appendix 2 Table 6A; Appendix 2 Table 6B; Lund Research, 2018). Therefore, this test has fewer restrictions and would provide better results when examining small, unequal samples (Zimmerman, 1987).

Secondly, to examine the moderating effect of (1) working days lost because of labour strikes and (2) the classification of labour strikes on the relationship between an industry in which a company operates and its ERD, this study used Hayes Model 2 and Model 3 for moderation analysis because they are used by researchers, such as Mullins et al. (2014) and Pham et al. (2019).

Measures and validity

The variables used in Model 2 were the following: *Discl* (i.e. ERD) represents the total word count of ERD-related citations or references across integrated, annual, and standalone sustainability reports. The justification for examining these reports is that they are considered credible sources of both financial and employee-related non-financial information (Caglio et al., 2019, cited in International Integrated Framework Council, 2013; Williams & Adams, 2013). *Strike* represents the number of working days lost because of a labour strike in a company. *Industry* (i.e. the sector under which a company is listed on the JSE) represents a category variable in which 1 is chemical, 2 is construction, 3 is forestry, 4 is manufacturing, 5 is mining and 6 is transport. Furthermore, *PLS* represents a dummy variable, which is equal to 0 for companies that did not have protracted strikes and 1 for companies that have lost at least 12 working days because of strikes. *Industry x Strike* represents the interaction between the number of working days lost because of a labour strike and a company's industry. *Industry x PLS* represents the interaction between a dummy variable for a PLS and a

company's industry. In addition to the above-stated variables, Model 3 extended Model 2 by incorporating the following two interactions. *Strike x PLS* represents the interaction between the number of working days lost because of a labour strike and a dummy variable for a PLS. *Industry x Strike x PLS* represents the interaction between the number of working days lost because of a labour strike, a dummy variable for a PLS and a company's industry.

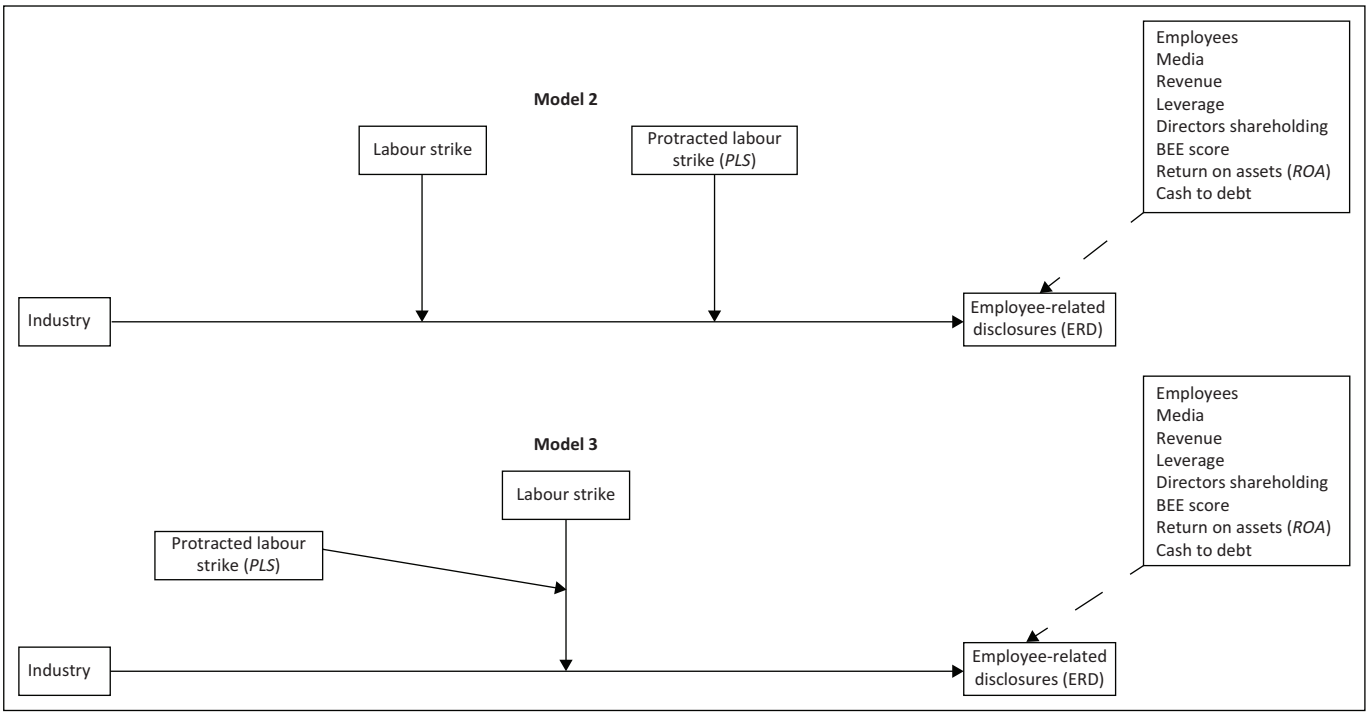
Consistent with previous studies that have examined ERD, this study added several control variables in Figure 1 as well as in the earlier-mentioned moderation equations. These are *media* computed as the ratio of number of times a company's name appears in the sampled newspaper articles to the total number of text or words in the specified period's newspaper articles (Pollach, 2014); *employees* represents the total number of employees from the sampled company (Kent & Zunker, 2017); *leverage* is computed as the ratio of a company's total debt to total assets (Sierra et al., 2013); *revenue* computed by dividing the company's revenue by its number of employees (Khaveh et al., 2012); and *Dir_sh* is measured by the percentage of ordinary shares and other shares held by the chief executive officer (CEO) and executive directors (Loliwe, 2016). *BEE_score* represents BEE ratings from the Empowerdex, and if a company was not reported in the BEE rating list, its BEE score was set as zero (Loliwe, 2016); *ROA* is computed as the ratio of profits/(loss) for the year to total assets (Sierra et al., 2013); and *cash_debt* is computed as the ratio of cash generated from operations to total debt (Benjamin et al., 2020).

For validity, the following tests were performed: The researcher selected data points at the 16th, 50th, and 84th percentiles of the distributions of *Strike* and *PLS* variables to examine when these variables moderate the ERD of the sampled companies (Hayes, 2018). The 84th percentile data point of the *Strike* variable equalled 12 working days, which was selected to be a criterion for categorising a labour strike as protracted. Also, all the variables have been mean-centred at a 95% confidence interval (CI) (Hayes, 2018). Other tests performed included correlation, *R*-squared, plotting graphs, skewness, and bootstrapping.

Sample

This study examined six industries that had the highest number of working days lost because of strikes in 2009, as indicated in the 2009 report (DoL, 2009). These industries include the chemical, construction, forestry, manufacturing, mining and transport sectors. However, this study excluded the community services sector, which the government mainly funds and runs (Figure 2; Moolman & Van der Waldt, 2022).

The initial sample comprised 143 JSE-listed companies across the selected industries from 2010 to 2018. However, companies whose integrated or standalone sustainability reports could not be obtained and those not listed for the entire 9-year period were excluded. Furthermore, three other issues have been considered. Firstly, in 2012, there was a huge increase in the number of working days lost (i.e. an increase of 1563%) in the selected industries (Figure 2). Therefore, the sample period in this study started two financial periods before 2012 for comparative purposes. Secondly, if the sample period was pushed to the years before 2010, the reporting periods after 2008 (i.e. 2009) were possibly biased against ERD because of the 2008 global financial crisis



Source: Adapted from Hayes, A.F. (2018). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (2nd ed.). Guilford Publications

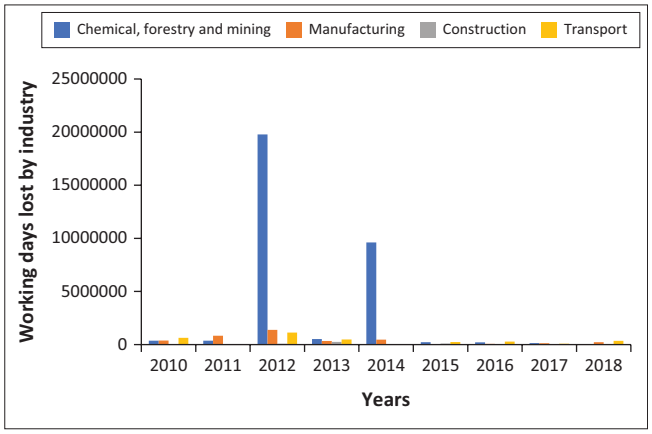
FIGURE 1: Conceptual model.

(Cohen et al., 2008; Mäkelä, 2013). Thirdly, the sample period ended in 2018 because some companies, including Lonmin, were delisted from the JSE in 2019. This would have meant excluding those companies from the study if the sample period had extended beyond 2018. Regardless, by examining 9 years, this study goes a step further than other studies for social disclosures (Brown & Deegan, 1998; Dube & Maroun, 2017; Hill & Maroun, 2015; Li et al., 2018; Loliwe, 2016) that analysed 5-year periods. Therefore, the final sample contains 81 companies, which resulted in 729 observations. This sample represented 24.7% of the companies listed on the JSE and approximately 30.0% of its market capitalisation (PwC, 2011; SARB, 2020).

Data collection

For the data about the industries the sampled companies are listed on, this study relied on the classifications from the IRESS database, JSE and Top Empowered Companies' Reports on the Empowerdex website. While ERD information was obtained from the integrated reports of the sampled companies by an NVivo text search, which used a classification list, such as that of Loliwe (2016), that contained words and phrases (i.e. text units) associated with ERD. Loliwe's (2016) list is comprehensive because it considers classification lists by Boesso and Kumar (2007), Kuasirikun and Sherer (2004), the SRI Index and the Global Reporting Initiative Guidelines (Appendix 1), which South African listed companies highly rate. NVivo software efficiently manages large amounts of data (Dollah et al., 2017). However, the researcher noticed that the speed of the text searches when he was performing long text searches was influenced by his computer's speed and internal memory.

The data concerning labour strikes were initially hand-collected through reading the accounting reports of the sampled companies and the reports for each of the sampled years (DoL, 2010, 2011, 2013, 2014a, 2014b, 2015, 2016, 2017, 2018). Later, the researcher searched for the terms 'industrial action', 'days lost', 'strike', 'protest', and 'unrest' using NVivo. Consequently, he read the text search results to find the number of working days lost because of labour strikes. One challenge in collecting labour strike data was when the number of working days lost was not mentioned in the reports, and to remedy this, the researcher searched the internet for news on those companies' labour strike details to estimate the number of working days lost.



Source: Adapted from DoL, 2010, 2011, 2013, 2014a, 2014b, 2015, 2016, 2017, 2018

Note: The working days lost because of labour strikes for industries (y-axis) are calculated by multiplying the number of workers involved in each strike by the days lost and adding the totals for all strikes experienced during the reference period by an industry (DoL, 2018). However, this formula was not applied in this study.

FIGURE 2: Working days lost in sampled industries.

Moreover, where data could not be obtained from the IRESS database and top empowered companies' reports, the affected control variables were manually computed using the information presented in respective companies' accounting reports. These include the *media* variable, which was determined using text searches performed on the newspaper articles from Sabinet SA Media from 2009 to 2019. Therefore, the researcher searched for several terms, such as 'manufacturing', 'coal', 'metals', 'mining', 'industrial', 'Nampak', and so forth, relating to the sampled JSE sectors and 81 company names, and the search results were displayed by their relevance. Thereafter, the higher of 25% of the articles found (rounded to the next 10) and the first 200 articles were downloaded for each year of the 11 years. This means that, in total, 2510 articles were downloaded (Table 2). Thereafter, they were loaded onto NVivo software for text searching for sampled companies' names and classified in relation to the years they relate to. Then, the number of times a company's name was mentioned in these newspaper articles was counted and recorded in Excel next to the relevant company's name over the 9 years. Because of the lagging effect of and overlap of financial periods over calendar years for the preparation of accounting reports (Deegan et al., 2002), the text search and counting for each year covered articles for 3 years (i.e. equal to the preceding, current and following years).

Ethical considerations

Ethical approval to conduct this study was obtained from the University of Dundee, School of Business, School Research Ethics Committee (No. UoD-SoB-STAFF-2023-16).

TABLE 1: Companies in sampled industries (left) mapped to Johannesburg Stock Exchange's classifications (right).

Industry variable	*N*	%	Industry	Sectors
Chemical	36	4.9	1000 Basic materials	1350 Chemicals
Forestry	18	2.5	-	1730 Forestry and paper
				1750 Industrial metals and mining
Mining [a]	216	29.6	-	1770 Mining
Construction	90	12.3	2000 Industrials	2350 Construction and materials
				2700 Industrial goods and services (excl. industrial transportation)
				2770 Industrial transportation
Transport	54	7.4	-	-
Manufacturing[b]	315	43.2	3000 Consumer goods	-
Total	**729**	**100.0**	**-**	**-**

[a], Mining sector consists of companies listed under the 1750 Industrial metals and mining and 1770 Mining sectors.

[b], Manufacturing sector consists of companies listed under the 3000 Consumer goods and 2700 Industrial goods and services sectors.

Results

Descriptive statistics, assumptions, and correlations

Table 1 shows that the industry with the most sampled companies is the manufacturing industry (43.2%), and with the least is the forestry industry (2.4%). This is reflective of the composition of these sectors and their classification on the JSE. Furthermore, Table 3 presents the descriptive statistics with means, standard deviation, and minimum and maximum values. Consistent with Kansal et al. (2014), *Discl* is positively skewed, meaning that most of the sampled companies disclosed less than the expected average of ERD. In addition, the sampled companies annually lost, on average, eight working days because of labour strikes over the sampled period. While companies without protracted strikes (i.e. *No PLS*) and those with *PLS* in the sampled industries were 83.5% and 16.5%, respectively (Table 4). This implies that PLS are rare because of the divisions among unions, efficiency of collective bargaining, fear of dismissal, and unemployment (Bolt & Rajak, 2016; Joyce, 2015).

Table 5 shows that the industry in which a company operates, labour strikes and their classification, media, number of employees and directors' shareholding had significant correlations with the level of ERD by a company. Therefore, it should be expected that these correlations would weaken the *R*-squares for the moderation regressions, even though the *strike* variable (i.e. the number of working days lost because of labour strikes) and *PLS* (i.e. the classification of labour strikes) show no statistically significant correlation.

TABLE 2: Calculation of newspaper articles that were selected.

Year	Total articles found	Minimum sample: Option 1	25% of the articles found: Option 2	Sample: Higher of Option 1 and 2
2009	871	200	218	220
2010	951	200	238	240
2011	859	200	215	220
2012	699	200	175	200
2013	871	200	218	220
2014	599	200	150	200
2015	942	200	236	240
2016	1183	200	296	300
2017	1005	200	251	260
2018	715	200	179	200
2019	806	200	202	210
Total	**9501**	**200**	**-**	**2510**

Lastly, the assumptions of the Mann–Whitney *U* tests were met concerning continuous dependent variables and the grouping of independent variables into two categories, which must be independently observed (Lund Research, 2018).

In Table 3, the variance inflation factor (VIF) values show no multicollinearity. However, other assumptions were violated because there were correlated residuals (*Durbin–Watson statistic = 0.673*), non-linear relationships between ERD and other variables, heteroscedasticity and extreme outliers (Appendix 2). The discussion on tests performed in addressing these issues is presented in Section 'Validity tests'.

Determining the differences in employee-related disclosures

Table 6Aa and Table 6B present groups of companies with PLS under Group A and those of companies without PLS under Group B in each of the six industries. The samples in these groups vary from 2 to 272 observations. After applying the formula for the Mann–Whitney U test to Groups A and B in each of the industries, the results were statistically significantly different for companies in the mining industry at the 0.05 level ($p < 0.001$; Table 6A), which means a mining company that was affected by a protracted strike disclosed significantly higher ERD than a mining company that was not affected by a PLS, and therefore, H_1 is supported. This finding seems true considering the research by Dube and Maroun (2017) and Alves and Branco (2020) regarding the mining industry.

Furthermore, the same formula for the Mann–Whitney *U* test was applied to companies grouped in Table 6B. This study compared companies that were affected by a protracted (i.e. longer than necessary) strike under Group A to companies in other industries that were not affected by any protracted strike under Group B. The results show that, on average, companies in the mining industry when affected by protracted strikes disclosed statistically

TABLE 4: Classification of labour strikes.

Labour strikes	*N*	%
No-PLS	609	83.5
PLS	120	16.5
Total	**729**	**100**

PLS, protracted labour strike.

TABLE 3: Descriptive statistics (N = 729).

Variables	Measurement	Mean	Median	SD	Minimum	Maximum	Skewness	VIF
Discl	*in thousands*	1464.332	1157.000	1081.671	96.000	6362.000	2.0	-
Media	*phrases*	17.000	2.000	33.000	0.000	291.000	3.9	1.253
Strike	*days*	8.010	0.000	26.940	0.000	297.000	6.3	1.527
BEE_score	*score*	23.400	0.000	36.000	0.000	106.100	0.9	1.080
Employees	*number*	14 925	6478.000	23 337	2.000	143 828	2.8	1.279
Dir_sh	*%*	11.630	0.700	18.790	0.000	81.790	1.7	1.141
Revenue	*in millions*	4.044	1.400	14.624	0.000	171.000	8.8	1.024
Leverage	*%*	47.690	45.100	60.950	0.000	1607.670	23.1	1.032
ROA	*%*	4.770	5.740	16.680	-198.620	181.300	-2.0	1.106
Cash_debt	*%*	23.880	23.600	121.270	-1980.000	775.410	-10.5	1.035

SD, standard deviation; VIF, variance inflation factor; ROA, return on assets.

TABLE 5: Pearson correlation and ETA statistics.

Variable	Discl	Media	Strike	BEE_score	Employees	Dir_sh	Revenue	Leverage	ROA	Cash_debt	Industry: ETA	Protracted: ETA
Discl	-	-	-	-	-	-	-	-	-	-	-	-
Media	0.474*	-	-	-	-	-	-	-	-	-	-	-
Strike	0.199*	0.226*	-	-	-	-	-	-	-	-	-	-
BEE_score	0.025	0.013	0.005	-	-	-	-	-	-	-	-	-
Employees	0.542*	0.363*	0.138*	-0.025*	-	-	-	-	-	-	-	-
Dir_sh	-0.293*	-0.233*	-0.054	-0.086*	-0.280*	-	-	-	-	-	-	-
Revenue	0.008	-0.047	-0.04	0.016	-0.047	-0.072*	-	-	-	-	-	-
Leverage	0.012	0.002	-0.014	0.033	0.027	-0.029	-0.035	-	-	-	-	-
ROA	-0.050	-0.103*	-0.014	0.062	0.089*	0.042	0.033	-0.157*	-	-	-	-
Cash_debt	0.035	0.008	0.012	0.016	0.025	-0.001	-0.004	0.000	0.148*	-	-	-
Industry: ETA	0.079*	-0.016	0.013	0.243*	0.109*	0.008	0.060	-0.005	-0.052	0.066	-	-
Protracted: ETA	0.130*	0.141*	0.614*	-0.034	0.119*	0.092*	-0.059	-0.009	0.008	0.048	-0.056	-

Note: ETA refers to Eta coefficient - Measure of effect size.
ROA, return on assets.
*, significant at the 0.05 level (two tailed).

TABLE 6A: Results of Mann–Whitney U test (comparison in the same industry).

Group A = *n* (*sample*)		Group B = *n* (*sample*)	U	Sig.
Chemical: No-PLS (*25*)	vs.	Chemical: PLS (*11*)	129.0	0.787
Construction: No-PLS (*74*)	vs.	Construction: PLS (*16*)	591.0	0.992
Forestry: No-PLS (*16*)	vs.	Forestry: PLS (*2*)	13.0	0.732
Manufacturing: No-PLS (*272*)	vs.	Manufacturing: PLS (*43*)	5141.0	0.203
Mining: No-PLS (*171*)	vs.	Mining: PLS (*45*)	2519.5	< 0.001*
Transport: No-PLS (*51*)	vs.	Transport: PLS (*3*)	56.5	0.472

PLS, protracted labour strike; Sig., significance.
*, represents significance at 0.05 level.

TABLE 6B: Results of Mann–Whitney U test (comparison with other industries).

Group A = *n* (sample)		Group B = *n* (sample)	U	Sig.
Chemical: PLS (*11*)	vs.	Construction: No-PLS (*74*)	260.0	0.054
Chemical: PLS (*11*)	vs.	Forestry: No-PLS (*16*)	86.0	0.942
Chemical: PLS (*11*)	vs.	Manufacturing: No-PLS (*272*)	723.0	0.004*
Chemical: PLS (*11*)	vs.	Mining: No-PLS (*171*)	902.5	0.822
Chemical: PLS (*11*)	vs.	Transport: No-PLS (*51*)	16.0	< 0.001*
Construction: PLS (*16*)	vs.	Chemical: No-PLS (*25*)	128.0	0.055
Construction: PLS (*16*)	vs.	Forestry: No-PLS (*16*)	83.0	0.094
Construction: PLS (*16*)	vs.	Manufacturing: No-PLS (*272*)	1948.5	0.482
Construction: PLS (*16*)	vs.	Mining: No-PLS (*171*)	935.5	0.037*
Construction: PLS (*16*)	vs.	Transport: No-PLS (*51*)	214.0	0.004*
Forestry: PLS (*2*)	vs.	Chemical: No-PLS (*25*)	21.0	0.752
Forestry: PLS (*2*)	vs.	Construction: No-PLS (*74*)	44.0	0.351
Forestry: PLS (*2*)	vs.	Manufacturing: No-PLS (*272*)	140.5	0.239
Forestry: PLS (*2*)	vs.	Mining: No-PLS (*171*)	164.0	0.926
Forestry: PLS (*2*)	vs.	Transport: No-PLS (*51*)	7.0	0.029*
Manufacturing: PLS (*43*)	vs.	Chemical: No-PLS (*25*)	354.0	0.020*
Manufacturing: PLS (*43*)	vs.	Construction: No-PLS (*74*)	1563.0	0.874
Manufacturing: PLS (*43*)	vs.	Forestry: No-PLS (*16*)	228.0	0.048*
Manufacturing: PLS (*43*)	vs.	Mining: No-PLS (*171*)	2526.5	0.002*
Manufacturing: PLS (*43*)	vs.	Transport: No-PLS (*51*)	491.0	< 0.001*
Mining: PLS (*45*)	vs.	Chemical: No-PLS (*25*)	312.0	0.002*
Mining: PLS (*45*)	vs.	Construction: No-PLS (*74*)	633.0	< 0.001*
Mining: PLS (*45*)	vs.	Forestry: No-PLS (*16*)	238.0	0.045*
Mining: PLS (*45*)	vs.	Manufacturing: No-PLS (*272*)	2016.5	< 0.001*
Mining: PLS (*45*)	vs.	Transport: No-PLS (*51*)	145.5	< 0.001*
Transport: PLS (*3*)	vs.	Chemical: No-PLS (*25*)	16.0	0.125
Transport: PLS (*3*)	vs.	Construction: No-PLS (*74*)	81.0	0.457
Transport: PLS (*3*)	vs.	Forestry: No-PLS (*16*)	8.0	0.085
Transport: PLS (*3*)	vs.	Manufacturing: No-PLS (*272*)	333.5	0.587
Transport: PLS (*3*)	vs.	Mining: No-PLS (*171*)	105.5	0.081

PLS, protracted labour strike; Sig., significance.
*, represents significance at 0.05 level.

significantly higher ERD than companies that were not affected by protracted strikes in five other industries (p = 0.002 chemical, p < 0.001 construction, p = 0.045 forestry, p < 0.001 manufacturing, and p < 0.001 transport). Therefore, $\mathbf{H_2}$ is supported. Also, there were mixed significant differences in ERD by companies in the manufacturing industry that had PLS as compared to companies in other industries.

Moderating effect of labour strikes

Table 7 presents the results for Model 2 and Model 3, using unadjusted data. These models analyse the relationship between industry, labour strikes, control variables and ERD, using unadjusted data. Under Model 2, firstly, companies in the transport industry disclosed statistically significantly lower ERD compared to those in the reference industry (chemical industry) (β = –455.435, p = 0.025).

Secondly, there was a statistically significant negative relationship between working days lost and ERD when an *industry* variable was not specified (β = –6.235, p = 0.046). This suggests that companies which experienced strikes tended to disclose less ERD information. Thirdly, the interaction between the *mining* industry and *strike* was statistically significant (β = 11.784, p = 0.001) as compared to companies in the reference industry. This indicates that the influence of the *industry* variable on ERD was statistically significantly moderated by the occurrence of labour strikes in the mining sector. This finding is further supported by the 0.9% increase in R-squared (ΔR^2 = 0.009) when working days lost because of a labour strike are included in Model 2. Therefore, $\mathbf{H_3}$ is supported. Unlike previous studies that found a direct relationship between an industry in which a company operates and social disclosures (Boesso & Kumar, 2007; Cuganesan et al., 2010), these results indicate that, in South Africa, the relationship between a company's industry and its level of ERD is conditional on whether it had a labour strike or not.

TABLE 7: Results of Hayes models.

Variables	Model 2				Model 3			
	Coefficient	SE	*p*	R^2 change	Coefficient	SE	*p*	R^2 change
Constant	1106.413	173.416	< 0.001	-	1066.910	183.052	< 0.001	-
Direct effects								
Industry: Chemical[a]								
: Construction	-187.958	192.320	0.329	-	-111.844	203.298	0.582	-
: Forestry	353.664	263.683	0.180	-	349.758	273.009	0.201	-
: Manufacturing	-247.173	175.087	0.158	-	-209.780	185.235	0.258	-
: Mining	272.814	181.514	0.133	-	300.107	191.625	0.118	-
: Transport	-455.435	203.312	0.025*	-	-414.909	213.525	0.052	-
Strike (working days lost)	-6.235	3.199	0.046*	-	25.349	47.711	0.595	-
PLS	302.632	327.239	0.355	-	347.976	334.819	0.299	-
Interaction effects								
Industry: Chemical x Strike[a]	-	-	-	0.009	-	-	-	-
: Construction x Strike	7.875	7.212	0.275	-	-60.343	55.847	0.280	-
: Construction x Strike	0.234	116.432	0.998	-	105.833	173.538	0.542	-
: Manufacturing x Strike	4.660	4.657	0.317	-	-17.049	57.311	0.766	-
: Mining x Strike	11.784	3.649	0.001*	-	-1.028	57.165	0.986	-
: Transport x Strike	16.152	48.059	0.737	-	-18.975	117.863	0.872	-
Industry: Chemical x PLS[a]	-	-	-	0.001	-	-	-	-
: Construction x PLS	-378.105	422.953	0.372	-	-514.947	435.057	0.237	-
: Forestry x PLS	-336.428	2895.970	0.908	-	2878.898	4052.445	0.478	-
: Manufacturing x PLS	-209.136	367.020	0.569	-	-247.802	374.670	0.509	-
: Mining x PLS	-313.617	362.717	0.388	-	-344.905	370.429	0.352	-
: Transport x PLS	-427.307	1084.568	0.694	-	-491.623	1200.125	0.682	-
Strike x PLS	-	-	-	-	-31.756	47.825	0.507	-
[Industry x Strike] + [Industry x PLS]	-	-	-	0.011	-	-	-	-
Industry: Chemical x Strike x PLS[a]	-	-	-	-	-	-	-	0.564
: Construction x Strike x PLS	-	-	-	-	70.335	56.364	0.212	-
: Forestry x Strike x PLS	-	-	-	-	-236.717	238.106	0.320	-
: Manufacturing x Strike x PLS	-	-	-	-	21.761	57.502	0.705	-
: Mining x Strike x PLS	-	-	-	-	12.913	57.284	0.822	-
: Transport x Strike x PLS	-	-	-	-	36.164	129.557	0.780	-
Control variables								
Media	7.446	1.057	< 0.001*	-	7.554	1.062	< 0.001*	-
BEE score	2.563	0.891	0.004*	-	2.547	0.893	0.004*	-
Employees	0.017	0.001	< 0.001*	-	0.017	0.001	< 0.001*	-
Dir_sh	-4.306	1.747	0.014*	-	-4.352	1.758	0.014*	-
Revenue	4.047	0.000	0.056	-	4.034	0.000	0.056	-
Leverage	6.710	49.994	0.893	-	8.826	50.096	0.860	-
ROA	-139.264	194.991	0.475	-	-140.602	195.655	0.473	-
Cash_debt	19.869	25.236	0.431	-	20.539	25.298	0.417	-
Model summary								
F value	24.383	-	< 0.001*	-	19.731	-	< 0.001*	-
Degrees of freedom	25.000	702.000	-	-	31.000	696.000	-	-
R^2	0.465	-	-	-	0.468	-	-	-

SE, standard error; PLS, protracted labour strike; ROA, return on assets.
[a], represents the reference category.
*, represents significance at 0.05 level.

Conversely, the moderating effect of labour strikes on ERD by companies operating in four other industries (i.e. construction, forestry, manufacturing, and transport sectors) was not found to be statistically significant. Therefore, the moderation effects of labour strikes on ERD may be industry-specific. Similarly, the classification of a labour strike as a PLS did not lead to any statistically significant moderation differences. Fourthly, some control variables had a statistically significant influence on ERD. For instance, *media* ($p < 0.001$), *employees* ($p < 0.001$), and BEE_score ($p = 0.004$) had positive relationships. Conversely, Dir-ow ($p = 0.015$) had a negative sign.

The analysis of conditional effects concerning the transport industry was addressed in the first paragraph of this section. Now, continuing with the third finding at the top of this section regarding the mining industry, this study further examined the ERD in the mining industry in terms of how many working days were lost and which classification of the labour strike that might have moderated the ERD.

Therefore, between 0 and 12 working days were lost, and when a classification for *PLS* variable is 0, companies in the mining industry statistically significantly increased their ERD by 414.223 phrases ($p = 0.026$) compared to those in the reference industry (Table 8).

TABLE 8: Estimated conditional effects.

Variables	The distribution of strike, 50th percentiles			The distribution of strike, 50th percentiles			The distribution of strike, 84th percentiles			The distribution of strike, 84th percentiles		
	Zero working days lost and No-PLS			12 working days lost and No-PLS			Zero working days lost and PLS			12 working days lost and PLS		
	Effect	SE	*p*	Effect	SE	*p*	Effect	SE	*p*	Effect	SE	*p*
Industry: Chemical[a]	1518.550	-	-	1443.726	-	-	1821.181	-	-	1746.358	-	-
: Construction	-187.958	192.320	0.329	-93.463	207.768	0.653	-566.063	381.944	0.139	-471.568	337.399	0.163
: Forestry	353.664	263.683	0.180	356.475	1384.685	0.797	17.236	2920.532	0.995	20.047	1583.893	0.990
: Manufacturing	-247.173	175.087	0.158	-191.257	183.185	0.297	-456.309	325.829	0.165	-400.393	296.861	0.178
: Mining	272.814	181.514	0.133	414.223	186.098	0.026*	-40.803	319.728	0.898	100.607	296.355	0.734
: Transport	-455.435	203.312	0.025*	-882.742	598.495	0.662	-882.742	1078.535	0.413	-688.918	616.253	0.264

PLS, protracted labour strike; SE, standard error.
[a], represents the reference category - Discl.
*, represents significance at 0.05 level.

To visualise this, Table 9 shows three conditions of labour strikes that were tested: (1) Employee-related disclosures reported during periods without any labour strike, (2) Employee-related disclosures reported during periods with labour strikes lasting less than 12 working days (i.e. between 0 and 12 working days were lost), and (3) Employee-related disclosures reported during periods with PLS. Therefore, Table 10 presents data generated by SPSS using data at the 16th, 50th, and 84th percentiles for industry, strike, PLS, and ERD variables. However, because of the skewed distribution of the original data, the 16th percentile information was excluded from this analysis, as it was the same as the 50th percentile values. Lastly, Figure 3 contains two graphs with the conditional effects of working days lost because of labour strikes on ERD. The top graph shows that when there were no labour strikes, companies in the forestry sectors disclosed the highest ERD. However, when there were labour strikes for less than 12 working days, companies in the mining sector increased their ERD, while companies in the forestry sector decreased their ERD.

In the bottom graph, the dashed line is for PLS (12 days or longer). Here, companies in the forestry sector further decreased their ERD, while the mining companies maintained the same level of ERD regardless of the classification of the labour strike. Interestingly, some companies in the chemical industry did disclose increased ERD when affected by PLS compared to companies in other industries. This is because different industries and companies are structured and operate differently, from top management to floor workers. Furthermore, each strike has unique features, such as its causes, nature, length, and how management plans to resolve it, which may not exist in other companies or industries. This supports normative isomorphism, where ERD are influenced by industry-related practices, management responses, and strategic intentions (DiMaggio & Powell, 1983; Shubham & Murty, 2018; Unerman & Bennett, 2004). However, the solid line that shows zero working days were lost because of strikes and there were PLS needs to be ignored because it is unrealistic.

Validity tests

In this section, the three methods used to correct the violated assumptions and their findings are discussed. The first adjustment performed was to mean-centre all the variables in Model 2 before it was re-run to improve the validity of the results. The second adjustment was to transform the values for *strike* variable using logs to fix non-linearity.

This is because, in Table 3, the *strike* is skewed to the right. However, to avoid the misuse of statistical tools, the researcher decided against the idea of removing outliers and adjusting unimportant variables to this study's aim (Gardenier & Resnik, 2002). The third adjustment was to apply a heteroscedasticity-consistent standard error estimator called HC3 to correct heteroscedasticity because the observations tested in this study are over 250 (Long & Ervin, 2000). Therefore, Model 2 regression was re-performed with the above additions. Concerning Model 3, there were no results produced for the first adjustment; hence, no further analysis was performed with it.

TABLE 9: Three conditions of labour strikes a company may experience.

Working days lost	*N*	%
Zero days	538	73.8
< 12 days	71	9.7
12 days and more	120	16.5
Total	**729**	**100**

TABLE 10: SPSS data points at 50th and 84th percentiles.

Industry[a]	Strike[b]	PLS[u]	Discl
1.000	0	0	1,518.550
2.000	0	0	1,330.592
3.000	0	0	1,872.214
4.000	0	0	1,271.376
5.000	0	0	1,791.364
6.000	0	0	1,063.115
1.000	0	1	1,821.181
2.000	0	1	1,255.119
3.000	0	1	1,838.417
4.000	0	1	1,364.872
5.000	0	1	1,780.378
6.000	0	1	938.439
1.000	12	0	1,443.726
2.000	12	0	1,350.263
3.000	12	0	1,800.201
4.000	12	0	1,252.469
5.000	12	0	1,857.950
6.000	12	0	1,182.115
1.000	12	1	1,746.358
2.000	12	1	1,274.790
3.000	12	1	1,766.405
4.000	12	1	1,345.965
5.000	12	1	1,846.965
6.000	12	1	1,057.439

[a], 1.000 = Chemical, 2.000 = Construction, 3.000 = Forestry, 4.000 = Manufacturing, 5.000 = Mining, 6.000 = Transport; [b], Working days lost; [u], Dummy variable.

In Table 11 (column 1), the results show that three direct effects and one control variable were statistically significant, two had negative coefficients, and others were positive. In addition to earlier results for the unadjusted Model 2 data, the variables for the manufacturing sector and *revenue* were now statistically significant. However, the effect of the industry variable on the mining companies' ERD was not moderated by working days lost as before. Next, in Table 11 (column 2) the results are similar to the results for the unadjusted Model 2 data. Besides that, the *BEE_score* and *Dir_sh* variables lost their significance, whereas *revenue* became statistically significant. Lastly, in Table 11 (column 3), the results show an extra finding for moderated effects, which is that the *strike* variable statistically significantly moderates the effect of the *industry* variable on the ERD of companies in the transport industry. Overall, the results in Table 11 and their R^2 appear to be superior when compared to those based on the original data, but at the expense of reducing the original observations by 537.

Concluding discussion

This study examined the influence and moderating effects of labour strikes on the ERD of the companies listed in six JSE industries from 2010 to 2018, and its findings revealed three key insights. Firstly, using the Mann–Whitney *U* tests, this study found conflicting results because companies in different industries exhibit different responses to PLS. This contrast was found in companies in the transport industry, which did not disclose statistically significantly different ERD, and those in the mining industry disclosed statistically significantly higher ERD. This suggests that the sampled companies adhere to their industries' norms regarding disclosing ERD, even during disruptive labour events (Alves & Branco, 2020; DiMaggio & Powell, 1983). Therefore, readers may find it difficult to determine whether different industries' reports constitute a public relations exercise or demonstrate genuine improvements in their practices and employee conditions.

Secondly, contrary to existing literature that indicates that ERD and labour strikes are not correlated (Guthrie & Parker, 1989; Loliwe, 2016), Model 2 results showed a statistically significant negative relationship between labour strikes and ERD ($\beta = -1130.792$, $p = 0.025$), regardless of an industry. For example, the chemical and forestry industries reported less ERD than other industries when they had labour strikes, which were not classified as protracted. Further evidence showed that the transport industry lost the fewest working days because of labour strikes; hence, it did not have any reason to disclose more ERD than desired because its employees were not powerful stakeholders. Similarly, the companies listed in the manufacturing industry maintained the same level of ERD when they had PLS and when they did not have labour strikes (Figure 3). Therefore, reducing ERD is one way which companies used to maintain their legitimacy (De Villiers & Van Staden, 2006). Equally, these industries did not want public scrutiny (Deegan, 2007) and adopted a strategy to distance themselves from labour disruptions that happened (Lindblom, 1993).

Thirdly, this study found that labour strikes significantly moderated the ERD of companies in the mining industry. Two theories that seem to capture this phenomenon well are the managerial branch of the stakeholder theory and the signalling effect in the voluntary disclosure theory. In this case, the former suggests that the management of the companies in the mining industry were influenced by employees' power to increase ERD during labour strikes (Deegan, 2007). While the latter proposes that some mining companies differentiated themselves from others by demonstrating that they had excellent relationships with their employees and good policies for them (Isaacs et al., 1997; Hetze, 2016).

Accordingly, this study extends our knowledge by examining the differing levels of ERD in companies operating in several industries (Boesso & Kumar, 2007; Cuganesan et al., 2010) based on the presence of PLSs and the moderating effects of labour strikes on the relationship between an industry a company is operating in and its ERD (Dube & Maroun, 2017; Loliwe, 2016). Regarding the former, the findings specifically show that when there are PLSs compared to no PLSs, the effect of industry

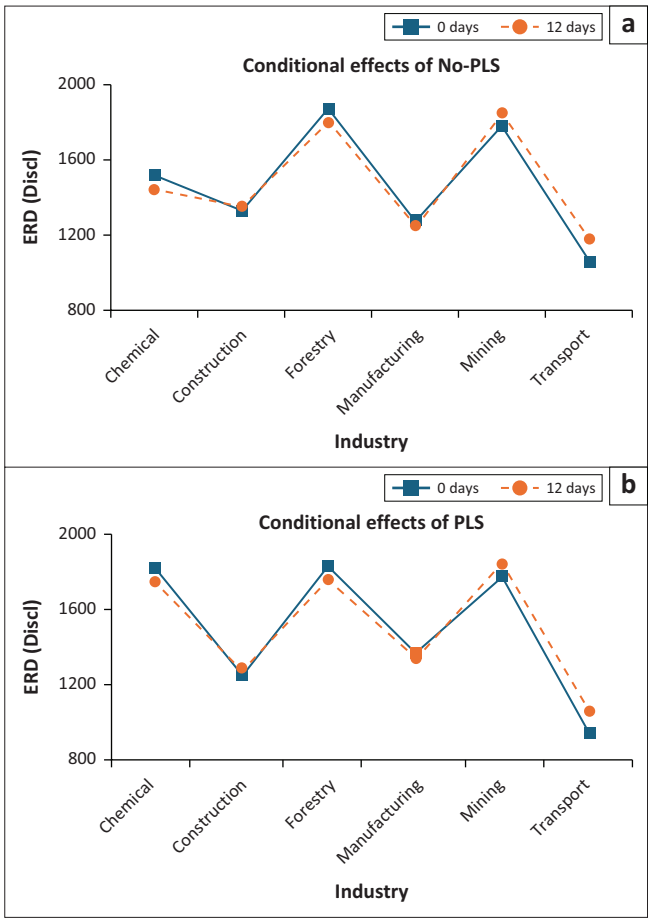
TABLE 11: Results of revised Hayes Model 2. The results in (1) have mean-centred data, (2) are based on a log-transformed moderator for working days lost, and (3) are mean-centred, homoscedastic, and used a log-transformed moderator for working days lost.

Variables	Model 2											
	(1)				(2)				(3)			
	Coefficient	SE	p	R^2 change	Coefficient	SE	p	R^2 change	Coefficient	SE	p	R^2 change
Constant	1114.595	163.568	< 0.001		2666.534	823.399	0.001		1401.118	353.500	< 0.001	
Direct effects												
Industry: Chemical[a]												
: Construction	-197.505	137.448	0.151	-	-1634.523	991.302	0.101	-	-414.685	283.132	0.145	-
: Forestry	290.845	814.887	0.721	-	3781.254	7094.795	0.595	-	-107.653	1567.082	0.945	-
: Manufacturing	-250.015	125.921	0.047*	-	-1451.748	842.987	0.087	-	-355.003	241.543	0.144	-
: Mining	307.028	143.615	0.033*	-	1578.816	835.706	0.061	-	167.799	281.266	0.552	-
: Transport	-408.048	134.215	0.002*	-	2420.128	1136.267	0.035*	-	-566.491	244.319	0.022*	-
Strike (working days lost)	-6.235	10.423	0.055	-	1130.792	737.454	0.127	-	-1130.792	498.809	0.025*	-
PLS	302.632	396.336	0.455	-	125.857	695.540	0.857	-	125.857	562.410	0.823	-
Interaction effects												
Industry: Chemical x Strike[a]	-	-	-	0.009	-	-	-	0.014	-	-	-	0.014
: Construction x Strike	7.875	12.562	0.531	-	1274.878	983.289	0.197	-	1274.878	716.038	0.077	-
: Forestry x Strike	0.234	236.284	0.999	-	-5092.892	10 026.415	0.612	-	-5092.892	7516.168	0.499	-
: Manufacturing x Strike	4.660	10.566	0.659	-	1015.649	827.247	0.221	-	1015.649	579.740	0.082	-
: Mining x Strike	11.784	11.886	0.322	-	1570.207	788.821	0.048*	-	1570.207	713.725	0.029*	-
: Transport x Strike	16.152	15.035	0.283	-	1700.352	1400.728	0.227	-	1700.352	694.910	0.015*	-
Industry: Chemical x PLS[a]	-	-	-	0.001	-	-	-	0.002	-	-	-	0.002
: Construction x PLS	-378.105	491.479	0.442	-	-471.080	873.573	0.590	-	-471.080	780.617	0.547	-
: Forestry x PLS	-336.428	5906.333	0.958	-	3448.249	6971.225	0.622	-	3448.249	5991.270	0.566	-
: Manufacturing x PLS	-209.136	407.225	0.608	-	-176.421	798.479	0.825	-	-176.421	615.943	0.775	-
: Mining x PLS	-313.617	498.098	0.529	-	-191.524	779.059	0.806	-	-191.524	786.480	0.808	-
: Transport x PLS	-427.307	473.390	0.369	-	-267.475	1316.089	0.839	-	-267.475	628.837	0.671	-
[Industry x Strike] + [Industry x PLS]	-	-	-	0.011	-	-	-	0.028	-	-	-	0.028
Control variables												
Media	7.446	1.993	< 0.001*	-	6.954	1.944	< 0.001*	-	6.954	3.799	0.069	-
BEE score	2.563	0.994	0.010*	-	1.971	2.041	0.336	-	1.971	2.153	0.361	-
Employees	0.017	0.003	< 0.001*	-	0.017	0.004	< 0.001*	-	0.017	0.004	< 0.001*	-
Dir_sh	-4.306	1.842	0.020*	-	8.871	4.847	0.069	-	8.871	8.497	0.298	-
Revenue	0.000	0.000	0.001*	-	0.006	0.003	0.030*	-	0.006	0.003	0.030*	-
Leverage	6.710	247.272	0.978	-	-416.889	475.044	0.381	-	-416.889	481.489	0.388	-
ROA	-139.264	433.158	0.748	-	-778.763	662.774	0.242	-	-778.763	1339.995	0.562	-
Cash_debt	19.869	25.951	0.444	-	-81.847	118.949	-0.492	-	-81.847	284.588	0.774	-
Model summary												
F(HC3) value	20.605	-	< 0.001*	-	16.079	-	< 0.001*	-	16.079	-	< 0.001*	-
Degrees of freedom	25.000	702.000	-	-	25.000	165.000	-	-	25.000	165.000	-	-
R^2	0.465	-	-	-	0.540	-	-	-	0.540	-	-	-

SE, standard error; PLS, protracted labour strike;ROA, return on assets.

[a], represents the reference category.

*, represents significance at 0.05 level.



ERD, employee-related disclosures; PLS, protracted labour strikes.

FIGURE 3: Moderating effects of the durations and classification of labour strikes on employee-related disclosures.

variations in ERD characterises normative isomorphism. Regarding the latter, they show that the effect of the mining industry variable is positively statistically significant on ERD when labour strikes affect companies operating in that industry. This depicts the managerial branch of the stakeholder theory. Also, examining the moderation effect of labour strikes differentiates this study from the existing literature that mainly examines the direct influence of labour strikes on ERD.

The earlier-discussed findings have implications for institutions that award companies for excellent CSR reporting, such as PricewaterhouseCoopers. These institutions may need to be highly vigilant when reviewing social disclosures of companies in the running for their awards. By improving their review procedures, they may better identify differences in CSR reporting that reflect or do not reflect such companies' conduct, thereby preventing undeserving companies from receiving awards.

However, this study has the following limitations: Firstly, the word count of cited words used to determine the variables for ERD and media ignores the context in which counted words are used, photographs and charts within accounting reports, as well as the length or proportion of words counted. Hence, the author had to review the text search results and manually exclude and include specific citations found by NVivo that met the above-stated limitations. Secondly, on a few occasions, NVivo could not read documents, or information could not be found, which forced authors to read, record, and calculate variables manually. This process might have led to errors. However, because of the amount of time the authors spent on this study, such concerns would have been found and corrected to a minimum. Thirdly, this study focussed on companies listed in limited industries on the JSE, which means the readers must take care when generalising the results in other jurisdictions and industries. Fourthly, annual and integrated reports are not the only source of information used by researchers and other stakeholders seeking to learn about companies' reporting practices and social performance.

Lastly, this study's data collection ended in 2018, and at the end of 2024, the amended *Companies Act of 2008* requirements concerning ERD for listed companies remain unchanged. However, amendments to the *Basic Conditions of Employment Act*, *Employment Equity Act*, *Occupational Health and Safety Act*, *Broad-Based Black Economic Empowerment Act*, *Skills Development Act*, *Pension Funds Act*, International Integrated Reporting Council (IIRC) Framework, and the United Nations (UN) Sustainable Development Goals, among others, will impact the content of ERD and present a limitation to this study's results. These changes include a growing trend of applying for exemptions from establishing a social and ethics committee through the Companies Tribunal (2023). Therefore, future studies could extend the sample period and data sources.

Acknowledgements

I want to thank Ms. K. Hurter for her editing services. I also thank Dr. R. Cordina, Dr. A.H. Ahmed, and the anonymous reviewers for their constructive comments.

Competing interests

The author declares that there are no financial or personal relationships that may have inappropriately influenced him in writing this article.

Author's contributions

T.L. is the sole author of this research article.

Funding information

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Data availability

The data that support the findings of this study are available from the corresponding author, T.L., upon reasonable request.

Disclaimer

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Appendices starts on the next page →

Appendix 1

TABLE 1-A1: Words that were used for the text searches of employee-related disclosures.

Category	Words searched
Employee costs	"Human capital (salaries and benefits)" OR "salary and administration costs" OR "This is before taxes and bonuses" OR "Payments to employees" OR "% of OR "employee costs" OR "employment cost" OR "staff costs" OR "Leave pay" OR "Directors' emoluments"
Employment	"Total package" OR "overall package" OR payroll OR remuneration OR salaries OR wages OR gratitude OR thank OR appreciate OR "worked hard" OR team OR worker OR "technical trainer" OR "chief executive officer" OR "chief financial officer" OR "chief operations officer" OR "employee classification" OR "full-time" OR "part-time" OR "permanent employee" OR "temporary employee" OR "Rock drill operator" OR Absentee OR employee OR intern OR mentee OR personnel OR "middle management' OR "senior management" OR "turn over" OR women OR contractor OR "labour indicator" OR "executive" OR people OR person OR turnover OR appoint OR resign OR age OR gender OR employ OR "employment category" OR professional OR manager OR leader OR "internal audit" OR foreman
Labour/management relations	union OR "organised labour" OR "Collective bargain" OR CCMA OR "Freedom of association" OR strike OR negotiation OR "Employee relation" OR "trade union" OR "staff engagement" OR NUM OR AMCU OR AMITU OR AWU OR UASA OR CFMEU OR TAWUSA OR NUMSA 0 R USW OR CEPPWAWU OR GI WUSAO R NCFAWU OR Solidarity OR SATAWU OR SACWU OR CASAWU OR SINTIA OR NAFAU OR FAWU OR NASARAIEU OR SAAPAWU OR NUPSAW OR SAPWU OR BBAWU OR ZSMI WU OR UDF OR CWU OR ZHCWU OR TALFU OR NATAWU OR ESWUSA OR EWUSA OR UCIMESHAWU OR SACAWU
Occupational health and safety	HIV/AIDS OR "Human immuno-deficiency virus" OR "acquire immune deficiency syndrome" OR ART OR "Antiretroviral" OR "World Aids day" OR tuberculosis OR TB OR HIV OR health OR safety OR fatal OR lives OR "healthier workforce" OR injury OR "unsafe behaviour" OR disease OR NI HL OR LTI FR OR LTI OR VCT OR occupational OR "Lost time injury" OR "Noise-induced hearing loss" OR "Voluntary counselling and testing" OR "days lost" OR "wellness" OR "wellbeing" OR "Occupational Health and Safety Standards" OR incident OR stoppage OR "trauma and emergency" OR "South African Mines Health and Safety Act" OR death
Training and education	"Adult based education and training" OR "skills development' OR "employee development" OR HRD OR "human resource development' OR induction OR learnership OR mentor OR numeracy OR literacy OR skill OR train OR "training and development" OR ABET
Diversity and equal opportunity	"Broad based economic empowerment" OR Empowering OR transformation OR diversity OR "equal opportunity" OR "employment equity" OR EE OR HDSA OR BEE OR "employee share ownership" OR "Black economic empowerment' OR "designated group" OR "historically disadvantage South African" OR "Broad-based Black Economic Empowerment Act" OR BBSEEC OR "Broad Based Sodo-Economic Empowerment Charter"
Benefits and welfare	benefit OR "medical services" OR medical OR pension OR scheme OR reward OR attract OR retain OR recruit OR selection OR career OR hiring OR promotion OR award OR "Loss of critical skill" OR security OR retrench OR housing OR accommodation OR incentive OR "bonus plan" OR ESC OR bonus OR ASAP OR LTIP
Other issues and compliance	"our focus" OR "Employee Value Proposition" OR values OR "unethical behaviour" OR "job selling" OR intimidation OR "whistle-blowing" OR "code of OR conduct OR ethic OR standard OR respect OR integrity OR honesty OR Trust OR dismissal OR practice OR "disciplinary action" OR warning OR grievance OR "Safety and Sustainable Development Policy" OR "Safety and sustainability committee" OR "Safety, Health and Environment Committee" OR "Remuneration committee" OR SLP OR "skills shortage" OR transportation OR discrimination OR "forced or compulsory labour" OR "foreign national" OR "hours worked" OR NEDLAC OR "international labour organisation" OR "The employment bureau of Africa" OR "World health organisation" OR "human rights" OR "labour practice" OR "decent work" OR "working condition" OR "living condition" OR employment OR unemployment OR "community skills development" OR hostel OR productivity OR "procurement spend" OR "Preferential Procurement Policy Framework Act" OR "Social, Ethics and Transformation" OR beneficiation OR livelihood OR "human resource" OR "united nations global compact" OR "international council on metal and mining" OR settlement OR "shift system" OR "debt counselling" OR "mining charter" OR "social and labour" OR poverty OR "locally based supplier" OR job OR "preferential procurement" OR Shanduka OR "department of labour" OR DOL OR MQA OR "transformation committee" OR "Audit and Risk committee" OR "customer service" OR audits OR "settling our employees" OR "notice period" OR workforce NOT "municipality, economic development, regional and regional government" OR CETA OR NHBRC OR "National Home Builders Registration Council" OR SANRAL 0R TETA OR DAFF OR "Department of Transport" OR "road safety" OR "arrive alive"

Appendix 2

Other assumptions tested

TABLE 1-A2: Outliers: The table shows extreme outliers with residuals > 3 standard deviations.

Casewise diagnostics[a]				
Case No.	**Std. residual**	**Discl.**	**Predicted value**	**Residual**
361	4.657	5713	1798.499	3914.501
362	4.823	5673	1619.334	4053.666
363	3.581	4618	1608.423	3009.577
364	3.180	4274	1601.416	2672.584
365	3.073	4186	1603.420	2582.580
437	-3.093	1091	3690.700	-2599.700
438	-3.266	1076	3821.319	-2745.319
440	-3.169	588	3251.567	-2663.567
441	-3.714	468	3589.693	-3121.693
559	5.781	6362	1503.478	4858.522
560	4.500	6334	2552.255	3781.745
561	5.209	6099	1720.551	4378.449
562	5.196	6026	1658.967	4367.033
563	4.329	5661	2022.377	3638.623
564	3.844	4612	1381.527	3230.473
565	3.650	4533	1465.231	3067.769
722	3.718	5995	2869.725	3125.275
724	3.594	5626	2604.998	3021.002

[a], Dependent variable: Discl.

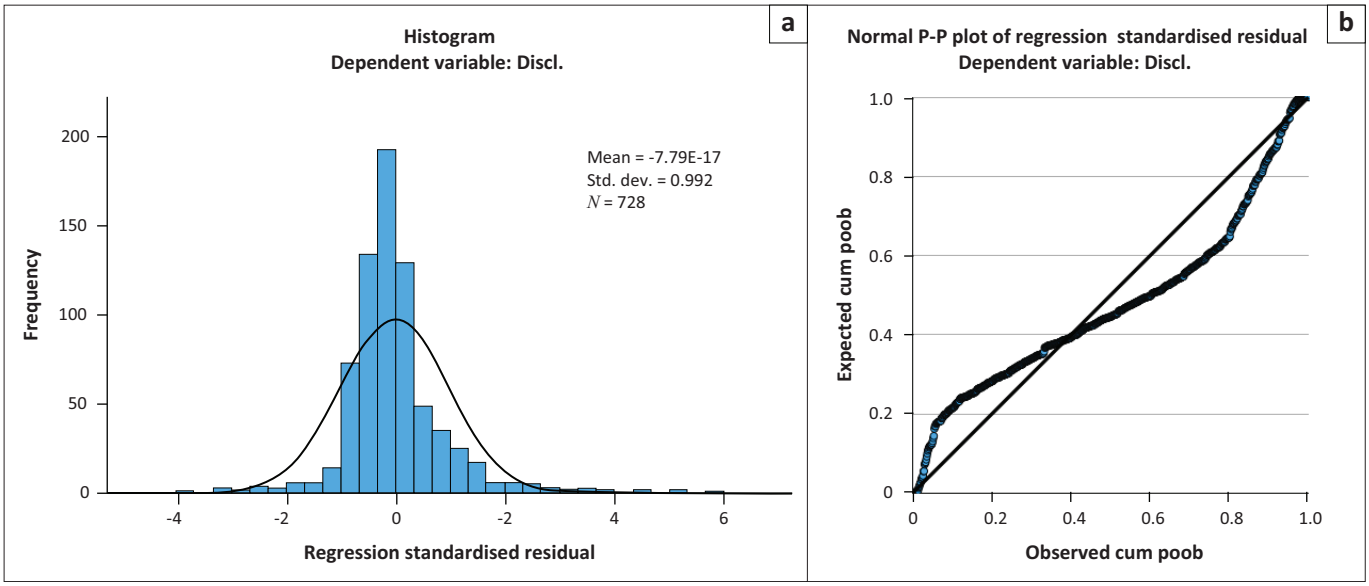

FIGURE 1-A2: Normality: (a) Histogram Dependent variable: Discl.; (b) Normal P-P plot of regression standardised residual Dependent variable: Discl.

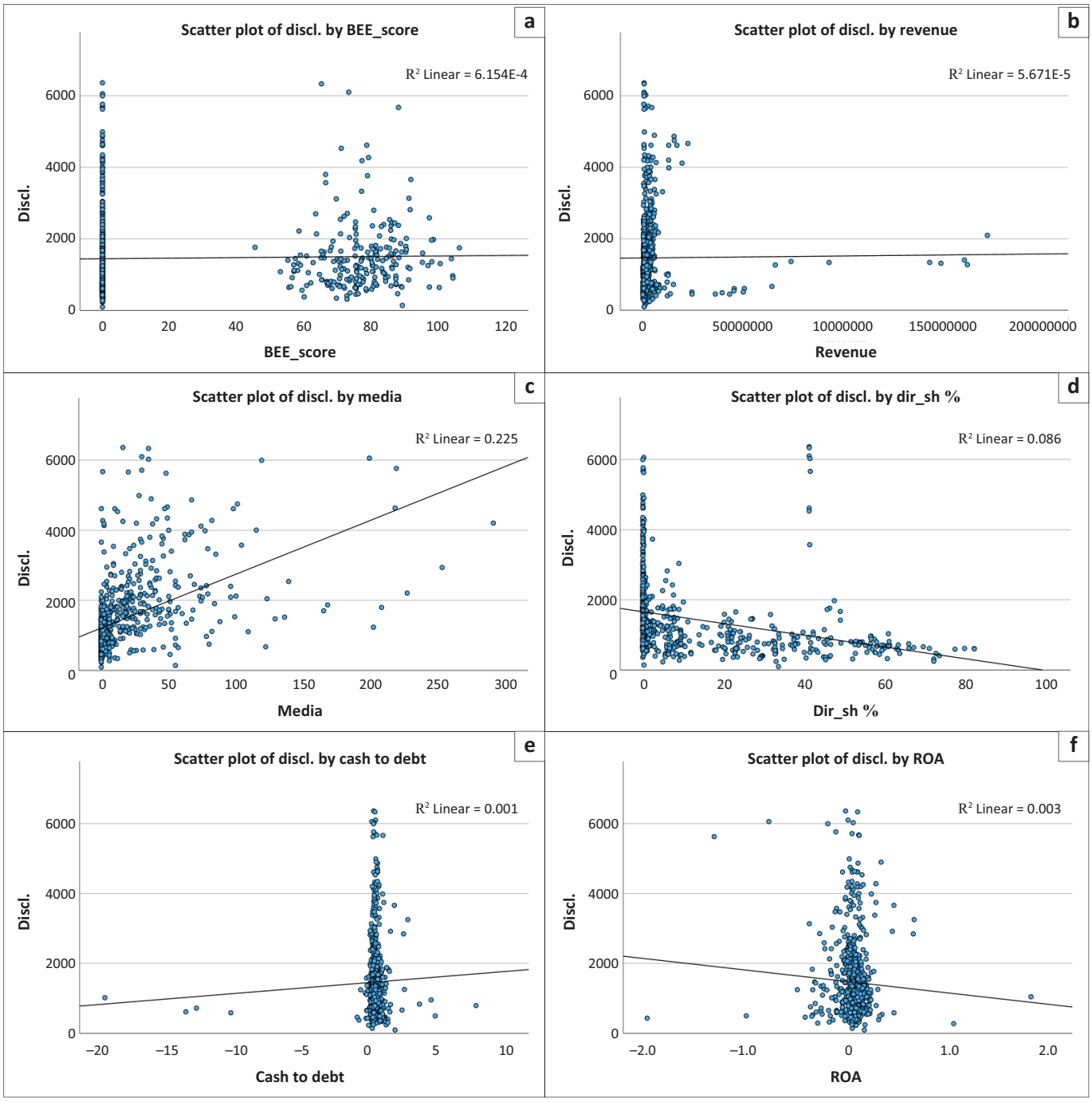

FIGURE 2-A2: Linearity - Scatter plot of: (a) discl. by BEE_score; (b) discl. by revenue; (c) discl. by media; (d) discl. by dir_sh %; (e) discl. by cash to debt; (f) discl. by ROA; (g) discl. by strike; (h) discl. by prolonged; (i) discl. by leverage; (j) discl. by employees; (k) discl. by industry-name.

Figure 2-A2 continues on the next page →

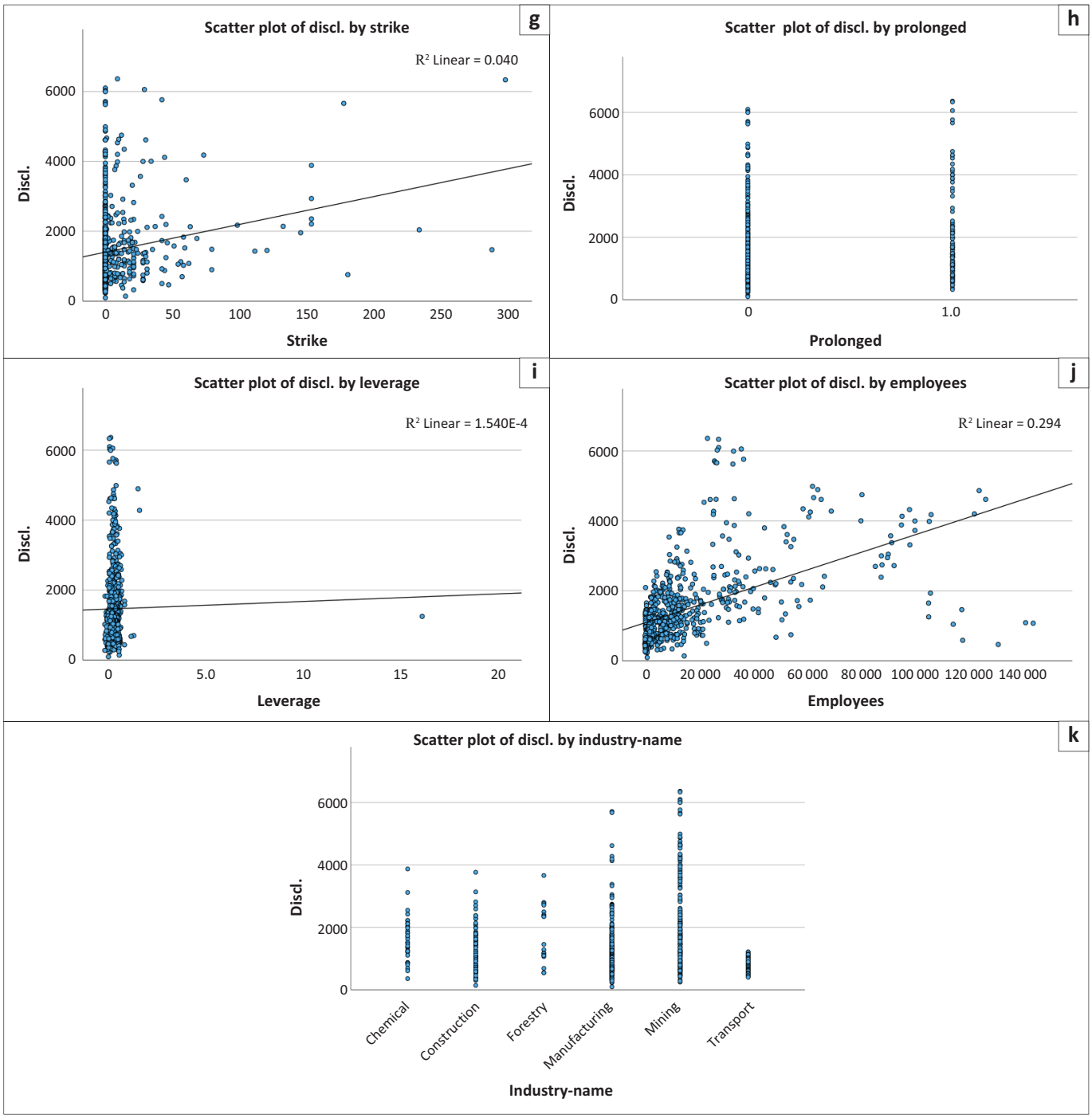

FIGURE 2-A2 (Continues...): Linearity - Scatter plot of: (a) discl. by BEE_score; (b) discl. by revenue; (c) discl. by media; (d) discl. by dir_sh %; (e) discl. by cash to debt; (f) discl. by ROA; (g) discl. by strike; (h) discl. by prolonged; (i) discl. by leverage; (j) discl. by employees; (k) discl. by industry-name.

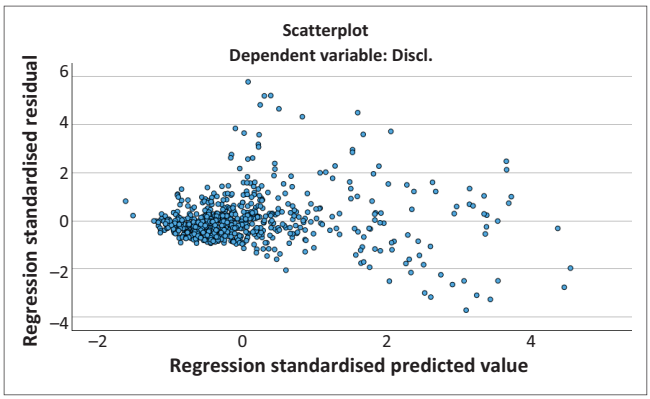

FIGURE 3-A2: Homoscedasticity: Scatterplot Dependent variable: Discl.