

An examination of UK companies' modern slavery disclosure practices: Does board gender diversity matter?

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Abstract

The United Nations' Sustainable Development Goals persuade governments and businesses to fight modern slavery as part of the 2030 Agenda for Sustainable Development. The UK government took the initiative by introducing the Modern Slavery Act in 2015. Despite this, little is known about how companies disclose information about their efforts to tackle modern slavery as required by the Act and the role of corporate governance as a determinant of modern slavery disclosure (MSD) levels. This study, therefore, investigates the extent to which companies engage in MSD and empirically examines the impact of board gender diversity (BGD) on MSD. Based on a content analysis of FTSE 100 companies' modern slavery statements during the 2016–2020 period, we find that MSD improved over time but is still relatively low. Our results show that companies pay less attention to the core practices of modern slavery, such as key performance indicators (KPIs), due diligence procedures, risk assessment and management, and training. This evidence suggests that companies tend to comply with the Act by focusing largely on symbolic structures rather than providing a comprehensive disclosure of their impacts on modern slavery practices to minimise regulatory risks and manage stakeholders' perceptions. We also find that boards with greater female representation have a positive and significant association with MSD. This finding is consistent with the gender socialisation theory in that women are more sensitive to communal values and ethics. Consequently, companies with a greater proportion of female directors are more transparent about their strategies and actions related to fighting modern slavery. Furthermore, a critical mass of at least four female directors is necessary before any positive impact on MSD can be observed. Our findings shed new light on this under-researched area and the role of female directors in addressing modern slavery risk and can be of interest to companies, policymakers, and other stakeholders.

KEYWORDS

board gender diversity, corporate governance, critical mass theory, gender socialisation theory, modern slavery disclosures, sustainable development goals

Abbreviations: BGD, board gender diversity; CMT, critical mass theory; GRI, Global Reporting Initiative; GST, gender socialisation theory; ILO, International Labour Organization; KPIs, key performance indicators; MSA, Modern Slavery Act; MSD, modern slavery disclosure; SDGs, Sustainable Development Goals.

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1 | INTRODUCTION

Modern slavery is an unethical phenomenon that thrives in the global supply chains of multinational corporations (Financial Reporting Council [FRC], 2022; Han et al., 2022; Moussa, Allam, & Elmarzouky, 2022). It is considered an extreme form of labour exploitation (Caruana et al., 2021). Regardless of the abolition of officially approved slavery and its use as a cheap source of labour, modern slavery practices widely exist in the informal economy (Bodendorf et al., 2022; Crane, 2013; Crane et al., 2019; Smith & Johns, 2020). Companies are motivated to move labour-intensive operations to less developed countries to benefit from cheap labour (Gold et al., 2015), thus providing a 'fertile ground' for labour exploitation (Christ et al., 2019). Globally, it is claimed that products worth a total value of \$354 billion are made by individuals subject to modern slavery (The Global Slavery Index [GSI], 2018). It is also argued that the COVID-19 pandemic has increased workers' vulnerability as they come under more pressure throughout global supply chains and become more exposed to modern slavery risks (Trautrimis et al., 2020).

In line with the United Nations' Sustainable Development Goals (SDGs), Target 8.7, the United Kingdom introduced its Modern Slavery Act (MSA) in 2015. According to the requirements of the Act, any organisation with a turnover of £36 million or more must publish an annual statement in which it discloses information about its activities to combat modern slavery within its operations as well as its supply chain (MSA, 2015). The modern slavery statement should include information about an organisation's policies related to modern slavery, due diligence process, risk assessment, effectiveness, and training.

Empirically, little is known about how companies account for modern slavery, and the prior studies that examined the phenomenon appear to be subject to a few limitations. Most studies have mainly employed 1-year cross-sectional data (Christ et al., 2019; Flynn, 2020), provided a generic index without any detailed measures (Flynn, 2020), or primarily employed qualitative methods (Islam & Van Staden, 2022; Rogerson et al., 2020). Such approaches do not provide the detailed level of data needed to study developments in modern slavery disclosure (MSD) levels over time. Generic indices do not provide enough details to conduct an in-depth analysis of corporate MSDs. In addition, Islam and Van Staden (2022) and Smith and Johns (2020) call for further research into MSDs. This study, therefore, attempts to fill a gap in the literature by proposing a comprehensive index of corporate MSD that includes all the elements highlighted in the United Kingdom's MSA. The index provides a more detailed view of corporate MSDs.

A recent report by the FRC (2022, p. 3) stresses the importance of studying the impact of '[c]ompany-specific aspects such as leadership style and corporate culture' on MSD. Accordingly, we examine the role of one of the important characteristics shaping corporate board leadership, gender diversity. Our rationale to focus on board gender diversity (BGD) is related to the evidence from prior research showing that female directors are more sensitive to ethical issues (Cumming et al., 2015) and may play an important role in shaping board decisions, including corporate disclosures (e.g., Ahmed et al., 2017; Al-Shaer & Zaman, 2016; Cabeza-García et al., 2018; Haque & Jones, 2020; Nadeem, 2020, 2022; Nekhilli et al., 2017).

However, empirical research on the effect of female directors on a company's disclosures of modern slavery is scant. Thus, we examine whether the representation of female directors on the board influences MSDs.

Our results show that the level of MSDs among UK companies is relatively low. We find that companies pay less attention to the core practices of modern slavery, such as key performance indicators (KPIs), due diligence procedures, risk management, and training. This evidence suggests that companies tend to comply with the Act by focusing largely on symbolic structures rather than providing a comprehensive disclosure of their impacts on modern slavery, such as KPIs and due diligence, to minimise regulatory risks and manage stakeholders' perceptions. We also find that boards with greater female representation are positively and significantly associated with MSD. This finding is consistent with the gender socialisation theory (GST) in that women are more sensitive to communal values and ethics. Consequently, companies with a greater proportion of female directors are more likely to disclose modern slavery and promote sustainable corporate practices. However, a critical mass of at least four female directors is necessary before any positive impact can be observed. Our study adds to the debate concerning the importance of gender diversity by incorporating the concept of the positive influence of heterogeneity on the disclosure of modern slavery. The results are robust to alternative regression specifications, alternatives to measures of MSD, and alternative measures of BGD, controlling for subsamples.

Our study contributes to the existing literature in several ways. First, this study directly responds to recent calls for a deeper examination of MSDs (e.g., Islam & Van Staden, 2022) and offers novel longitudinal insights into a relatively unexplored area of MSD over a longer period (2016–2020), thereby shedding light on how companies account for modern slavery. Unlike prior studies, we develop a comprehensive index to capture MSDs by companies. Prior research (e.g., Flynn, 2020) examines MSDs based on a top-level analysis of the main categories highlighted in the United Kingdom's MSA without digging into the details of each group. In this study, we propose a 46-point index that reflects more details about the extent of MSDs and highlights disclosure gaps between companies, which could have significant policy implications for regulators.

Second, we provide novel empirical evidence on the relationship between corporate MSD and BGD. Most previous studies on corporate social responsibility (CSR) have primarily examined the main pillars of CSR without considering the sub-dimensions of these pillars. This can cause a disconnect between CSR policy and practice, known as CSR decoupling (Tashman et al., 2019). Some recent studies, however, have examined the relationship between female directors and sub-dimensions of CSR, such as carbon disclosure and performance (e.g., Haque, 2017; Moussa et al., 2020), environmental disclosure (Liao et al., 2015), and biodiversity performance and disclosure (Haque & Jones, 2020). In response to recent calls for a more in-depth examination of the sub-dimensions of the CSR pillars (see, e.g., García-Sánchez et al., 2021; Hussain et al., 2018), this study contributes new evidence to the existing literature regarding the relationship between BGD and corporate MSD. The findings of this study provide managers and policymakers with better insights into how

women board members can contribute to enhancing the disclosure of modern slavery and reducing its associated risks. Finally, on the theoretical side, the findings provide support for the predictions of GST and critical mass theory (CMT). As such, our paper extends the applicability and predictive power of these complementary theories.

The remainder of this paper is structured as follows. Section 2 provides background on slavery and reviews recent studies on modern slavery. Section 3 outlines the theoretical framework and hypotheses development. This is followed by research design in Section 4 and empirical results and discussion in Section 5. The final section provides our conclusion and suggests directions for future research.

2 | MODERN SLAVERY: DEFINITION AND PRIOR RESEARCH

Modern slavery involves the exploitation of humans for personal or commercial gain (Anti-Slavery International, 2022), essentially through under-pricing labour, a key production element, through unethical and illegitimate means (Crane, 2013). Such exploitation can occur when individuals or entities force others to work under threats or limit their freedom to move to other areas (Anti-Slavery International, 2022; Crane, 2013). The International Labour Organization (ILO) and the Walk Free Foundation define modern slavery as the 'situations of exploitation that a person cannot refuse or leave because of threats, violence, coercion, deception, and/or abuse of power' (ILO, 2017, p. 9). However, it is claimed that there is a lack of a universal definition of modern slavery (Voss et al., 2019), but it is usually considered a form of human rights violation (Smith & Johns, 2020).

As part of its SDGs, Target 8.7, the UN calls on governments to take 'immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour' (United Nations Development Programme [UNDP], 2022). This call has added to the global pressures to end this unethical phenomenon that increased around the turn of the century. For example, in 2012, legislators in the US State of California have already issued the California Transparency in Supply Chains Act. This was followed by modern slavery acts in the United Kingdom and Australia in 2015 and 2018, respectively. A common theme among these acts is targeting big organisations with sizable turnovers. The rationale is that these organisations significantly impact the world economy and control most global supply chains throughout which modern slavery thrives (Trautrimis et al., 2020). It is also consistent with Mayer and Phillips (2017) 'outsourcing governance' notion, where a government delegates some of its governing functions to private entities, usually large businesses.

Under the 2015 UK MSA's Section 54, Transparency in the Supply Chains, all businesses with a turnover of £36 million or more are required to publish an annual statement on their websites disclosing their activities to fight modern slavery within their own business as well as their supply chains. The statement should describe the business and its supply chain, policies related to modern slavery, due diligence process, risk assessment, effectiveness, and training. In addition, in March 2021, the government launched a modern slavery statement

registry online, which acts as a platform where organisations share how they were able to tackle any problems related to modern slavery to enhance their transparency levels about their operations. It is estimated that more than 21,000 organisations have made their statements available on the government registry (HM Government, Department of Justice, 2021). Although there are no penalty provisions in the Act, it is suggested that the government is planning to introduce financial penalties for organisations that do not publish their annual modern slavery statements (HM Government, 2021).

A limited body of the literature examines how businesses and public organisations respond to the requirements of the United Kingdom's MSA. For example, Voss et al. (2019) indicate low compliance levels in the fashion and textile industry. Stevenson and Cole (2018) report substantial heterogeneity in the modern slavery statements published by 101 textile companies. Their findings suggest that companies adopt the same practices used with other social issues to detect and deal with modern slavery, regardless of the criminal nature associated with the latter. The situation was similar in the education sector as universities provided disclosures that were 'poor on detail, lack variation and have led to little meaningful action to tackle modern slavery' (Rogerson et al., 2020, p. 1505).

Flynn's (2020) examination of the determinants of corporate MSDs reveals industry, size, location, and, historical social responsibility commitment (such as supporting international accords to eliminate child labour) as predictors of disclosure levels. In a more recent study, Islam and Van Staden (2022) question the effectiveness of the Act's call for transparency regarding the combat against modern slavery in global supply chains and the fact that it lacks explicit provisions for the information to be verified externally. Their findings are based on feedback from interviews with corporate managers, a UK professional accounting body, ethical investment companies, a government representative, and anti-slavery campaign organisations. They argue that the transparency requirements of the Act are limited and, accordingly, lead to limited corporate responsibility in the fight against modern slavery. Our study complements the findings of Islam and Van Staden (2022) and Flynn (2020) by providing further empirical evidence on the transparency levels provided by UK companies regarding their modern slavery practices.

3 | THEORETICAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

3.1 | GST

In their quest to understand the role of women and their influence on corporate boards, scholars utilised various theories, including legitimacy (e.g., Deegan & Rankin, 1996; Moussa et al., 2020), agency (e.g., Cabeza-García et al., 2018; Setó-Pamies, 2015) and stakeholder theories (e.g., Al-Shaer & Zaman, 2016; Liao et al., 2015). However, the legitimacy theory is argued to have a limited perspective as it is probably relevant when explaining phenomena related to companies facing legitimacy issues (Deegan & Rankin, 1996; Liao et al., 2015). It is also argued that the agency theory emphasises economic issues as

managers attempt to minimise agency costs through increased disclosures (Liao et al., 2015). The stakeholder theory is claimed to provide a suitable lens to examine phenomena that involve a wide range of individuals and or groups (Donaldson & Preston, 1995; Freeman, 2010), such as corporate social and environmental disclosures. However, due to the ethical aspects of modern slavery, we draw on GST to guide our hypotheses and model development.

The main thesis of the GST is that women are more ethically sensitive than men (Cumming et al., 2015). In other words, women show higher sensitivity to ethical issues than men. According to GST, masculine and feminine personalities are formed by the different sex roles, concerns, and values to which women and men are exposed during their childhood, leading to a difference in moral principles (Dawson, 1997; Gilligan, 1993; Gilligan & Attanucci, 1994). Compared to men's focus on personal achievements, women are more focused on communal values, leading to better interpersonal relationship development (Carlson, 1972). Men's focus on competitiveness and success in business makes them more vulnerable under pressure to break the rules (Radtke, 2000). The socialisation of women in communal values is the likely factor behind their ethical sensitivity, which may explain why they behave more ethically than men in specific situations (Mason & Mudrack, 1996; Radtke, 2000).

The ethical impact of female representation on board is evident in recent studies and supports the predictions of the GST. For example, gender-diverse boards are linked with less likelihood to engage in financial misconduct (Wahid, 2019) and earnings management (Gull et al., 2018; Kyaw et al., 2015), and more consumption of renewable energy (Atif et al., 2021). In addition, more female representation on corporate boards is negatively associated with the likelihood and severity of security fraud (Cumming et al., 2015). Also, there is a significant difference between male and female managers with regard to their attitudes towards codes of ethics (Ibrahim et al., 2009). Furthermore, higher female representation on boards is reported to be negatively associated with environmental violations (Liu, 2018). On the other hand, Radtke (2000) reports evidence that refutes the premise that having more females enhances the ethicality of decision-making in business organisations. However, it should be noted that the study was based on 51 accountants, perhaps reflecting on a narrower perspective compared to the other studies that found an impact of female representations on corporate boards and that accountants are working in a heavily regulated domain. Thus, it can be argued that there is plenty of evidence from the accounting literature to support the notion that female directors are likely to behave more ethically than men.

3.2 | BGD and corporate MSDs

Examining the association between corporate disclosure levels and BGD, recent empirical studies suggest a positive association between the representation of female directors on corporate boards and disclosure levels. For example, evidence suggests that female directors promote information sharing (Nadeem, 2020). In addition, Cabeza-García et al. (2018) report that companies with higher percentages of female directors have better CSR disclosures. Moreover, Nadeem (2022)

finds a significant positive association between BGD and the readability of US companies' 10-K filings. Furthermore, other studies report a positive association between gender diversity and biodiversity disclosure levels (Haque & Jones, 2020), frequency and volume of continuous disclosures (Ahmed et al., 2017), better CSR disclosure (Cabeza-García et al., 2018; Nekhili et al., 2017) and sustainability reporting quality (Al-Shaer & Zaman, 2016).

From a moral perspective, modern slavery is an unethical phenomenon (ILO, 2017; Moussa, Allam, & Elmarzouky, 2022; Simic & Blitz, 2019). In addition to being outlawed in almost every jurisdiction (Gadd & Broad, 2018), the different forms of modern slavery, including forced labour, child labour, sexual exploitation, and human trafficking, are considered unethical practices (Moussa, Allam, & Elmarzouky, 2022). Victims of modern slavery effectively lose their freedom for the personal or commercial gain of others. The use of slave labour in production is also linked to the notion of ethical consumption. Smith and Johns (2020) adopt a historical perspective in their study of the sugar industry in the 19th century and highlight the case where consumers opposing slavery would pay extra for an ethical product. Consumers are showing concern about the working conditions of labour (Harrison et al., 2005).

Thus, considering the ethical implications of modern slavery and the focus of women on communal values and ethics and based on the solid empirical evidence of a positive association between BGD and corporate disclosure levels, we expect a positive association between BGD and MSD. Accordingly, we formulate our first hypothesis as follows:

Hypothesis 1. BGD is positively associated with companies' MSD levels.

3.3 | The critical mass of female directors

A few studies expanded the investigation of gender diversity's role on corporate boards by utilising the CMT. Under CMT, a small representation of female directors on corporate boards (i.e., one or two) can be considered as a 'token' that will have no significant impact on the decision-making process within the board. It is argued that the number of female directors must exceed a certain limit for their voices to significantly impact the board's decision-making process. Erkut et al. (2008) raise the question of whether the number of women on board makes a difference and explored the influence of three dimensions, one, two, and three women. They propose that a critical mass of three or more women breaks communication barriers and provides female directors with the circumstances under which they become more proactive. It is claimed that 'one woman on the board is a token, two is a presence, and three is a voice' (Kristie, 2011, p. 22).

Several studies have provided support for this argument (e.g., Cabeza-García et al., 2018; Gyapong et al., 2021; Joecks et al., 2013; Liu et al., 2014; Lucas-Pérez et al., 2015; Nadeem, 2022; Post et al., 2011; Yarram & Adapa, 2021). For example, Joecks et al. (2013) found evidence of female directors' positive impact on company performance when women represent at least 30% of the board

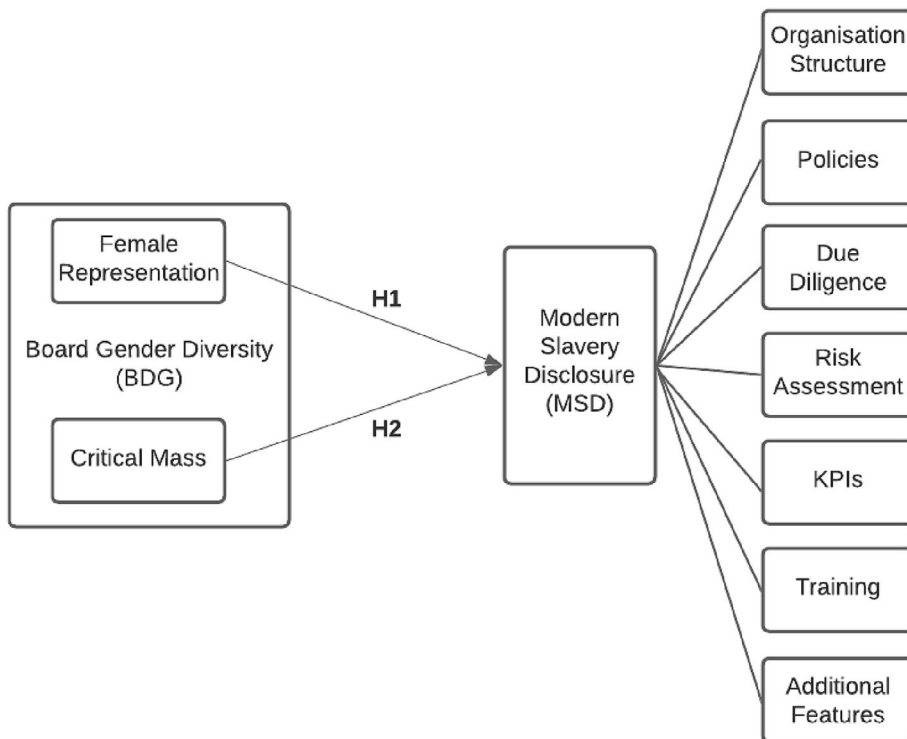


FIGURE 1 Research model and hypotheses.

membership (about three women). Liu et al. (2014) findings suggest that boards with three or more women have a stronger impact on company performance compared with two or fewer women. Yarram and Adapa (2021) report no association between gender diversity and companies' CSR performance under 'token' female representation but notice enhanced CSR performance with improved gender balance in corporate boards. Cabeza-García et al. (2018) report consistent results when examining the association between the number of female directors and CSR disclosure levels. Their findings suggest a threshold of three women for gender diversity to significantly impact disclosure levels. Accordingly, we formulate our second hypothesis as follows:

Hypothesis 2. A critical mass of at least three female directors on the board is positively associated with companies' MSD levels.

Figure 1 demonstrates our theoretical model, including the main variables and the hypothesised relationships.

4 | RESEARCH DESIGN

4.1 | Sample and data

Our initial sample is based on the modern slavery statements of the FTSE 100 companies over the period 2016–2020, after the enactment of the MSA in 2015. We chose the FTSE 100 companies because they are legally required to publish modern slavery statements, and their large size and influence may impact more individuals at risk of modern slavery (Christ et al., 2019; Gold et al., 2015). In

addition, these companies are more likely to operate within a global supply chain where slavery is prevalent. Of the initial sample, a total of 68 company-year observations were excluded due to missing modern slavery statements. A further 38 company-year observations were excluded due to missing financial and governance data. This leaves us with 394 company-year observations. Table 1 demonstrates the sample and the distributions across the industries. We obtained the modern slavery statements from the companies' websites. These statements were subject to content analysis to build our MSD index (MSDI). BGD measures and other company-specific financial and governance data were obtained from Eikon and Bloomberg databases.

4.2 | Measuring MSD

4.2.1 | Content analysis: Developing a novel MSDI

This study's dependent variable of interest is the disclosure of modern slavery. Consistent with environmental and social disclosure studies (e.g., Beattie, 2014; Dobler et al., 2015; Moussa, Kotb, & Helfaya, 2022), we employ content analysis to capture UK companies' MSD levels. Krippendorff (2018, p. 24) defines content analysis as a 'research technique for making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use'. We used NVivo for coding and classifying MSDs within the modern slavery statements.¹

¹NVivo is a qualitative data analysis computer software package produced by QSR International.

TABLE 1 Sample selection and distribution by industry.

	2016	2017	2018	2019	2020	Total
UK FTSE 100 companies	100	100	100	100	100	500
Less: Companies with missing modern slavery statements	19	15	10	8	16	68
Final sample by year	81	85	90	92	84	432
Industry	Company-year obs. (%)					
Oil and gas	8 (2%)					
Basic materials	50 (12%)					
Industrials	80 (19%)					
Consumer discretionary	81 (19%)					
Health care	16 (4%)					
Consumer staples	43 (10%)					
Telecommunications	10 (2%)					
Utilities	20 (5%)					
Financials	101 (23%)					
Technology	23 (5%)					
Total	432 (100%)					

A comprehensive index was developed to assess the extent of MSD, based on the MSA (2015) and widely recognised standards (GRI, Home Office's [2017] Transparency in Supply Chains Guide and Business & Human Rights Resource Centre [2018] indicators) as well as existing studies (e.g., Christ et al., 2019; Flynn, 2020; Islam & Van Staden, 2022). Our MSDI is composed of 46 items in 7 categories: organisation structure (4 items), policies (5 items), due diligence process (13 items), risk assessment and management (6 items), effectiveness/KPIs (6 items), training (7 items) and additional features (5 items). We use an equally weighted approach for the MSDI to minimise subjectivity in determining the significance of each modern slavery information. A pilot study was conducted to assess the MSDI's relevance for a sample of companies of different sizes and industries, which confirmed its suitability for the study. The scoring uses an unweighted dichotomous method where 1 is assigned for disclosure and 0 for non-disclosure. The MSD score is expressed as a percentage of the maximum score. Appendix A lists the 46 items and their definitions.

4.2.2 | The reliability and validity of the MSDI

The reliability and validity of the index were tested over three stages. First, we examined the extent to which the final index captures MSDs. A pilot test based on a random sample of 10 companies from FTSE 100 was examined to guide the building of our proposed index. The individual modern slavery statements were then coded against the proposed index by research team members and then cross-checked by other team members to reduce the subjectivity risk. The statements included in the pilot were independently coded, classified, and checked by three researchers. There were no notable variations in the results, with an agreement coefficient of .90, which is greater than the acceptable threshold in social science (Krippendorff, 2018; Marston & Shrivs, 1991). Any inconsistencies were re-analysed and resolved by

discussion between the three researchers. Following these discussions, clear guidelines were developed and given to the coders to ensure high consistency in coding the entire sample. After confirming the usability of the MSDI, data were collected by an independent coder who has received extensive training and has knowledge of modern slavery. Throughout the process, all researchers assessed the accuracy and consistency of the main coder's work (Krippendorff, 2018).

Second, the content of a sample of companies' modern slavery statements was analysed later in order to determine whether coding results remained stable over time (Krippendorff, 2018). The resulting MSD scores from this check were similar to those obtained in the first round, suggesting that the results can be replicated. Finally, we assessed the internal consistency of the MSD scores using Cronbach's alpha test. The test revealed Cronbach's coefficient alpha of .82, providing an acceptable internal consistency level among the items used to measure MSD. Put together, the above three steps add to the reliability of our MSD measure.

4.3 | Measuring BGD

Our independent variable, BGD, is measured by two proxy variables. The first measure is the proportion of women on boards, that is, the number of female directors divided by the total number of directors, which aligns with previous studies (e.g., Ben-Amar et al., 2017; Francoeur et al., 2019; Kassinis et al., 2016). We also use Blau's (1977) heterogeneity index to measure BGD. According to Miller and Del Carmen Triana (2009), the Blau index satisfies all four criteria suggested for a good measure of diversity: It contains zero point, larger values indicate greater diversity, the index is not unbounded, and it does not assume negative values. Using the Blau index, we measure BGD as follows:

$$BLAU = 1 - \sum_{i=1}^n P_i^2$$

where n is the number of categories (i.e., male and female) and P_i is the percentage of board members in each category. The Blau index ranges from 0, when there is only one gender represented on the board, to 0.5, when there is equality of representation between men and women. The greater the score, the more women are represented on the board.

To test our second hypothesis, we use four dummy variables (ONEFD, TWOFD, THREEFD, and FOURFD) as measures of the effect of the critical mass of female directors on the disclosure of modern slavery. ONEFD is a dummy variable equal to 1 when there is one female director on the board and 0 otherwise. The same definition applies to TWOFD, THREEFD, and FOURFD, with the number of female directors on the board equal to 1 when there are two, three, or four, respectively, and 0 otherwise (e.g., Ben-Amar et al., 2017; Cabeza-García et al., 2018; Liu et al., 2014; Nadeem, 2022; Post et al., 2011; Yarram & Adapa, 2021).

4.4 | Control variables

Similar to prior studies (Ben-Amar et al., 2017; Francoeur et al., 2019; Kassinis et al., 2016; Tantawy & Moussa, 2023), we included a wide range of company characteristics and governance mechanisms as control variables. These include (a) company characteristics, such as company size (FSIZE), company profitability (ROA), leverage (LEV), and growth opportunities (MTBV), and (b) company-level governance mechanisms, such as board size (BSIZE), board independence (BINDE), CEO duality (DUALITY) and the existence of a CSR sustainability committee (CSRCOM). We also account for the effects of the year and the industry. Table 2 includes the definitions of all these variables.

4.5 | Model specification

In order to test our hypotheses regarding BGD's impact on MSDs, we run the following models using ordinary least squares (OLS). To reduce the standard error and avoid the effect of omitted variable bias, we also re-run our regressions using a fixed-effect panel model.

TABLE 2 Variable definitions.

Variables	Symbols	Definitions
Modern slavery disclosure	MSD	It contains 46 items and 7 categories of modern slavery outlined in the UK Modern Slavery Act 2015: (1) organisation structure, (2) policies, (3) due diligence process, (4) risk assessment and management, (5) effectiveness/KPIs, (6) training and (7) additional features. The 46 items are scaled between 0 and 1, resulting in a possible total score of 46, ranging between 0% and 100%. Appendix A lists the 46 items of modern slavery disclosures.
Board gender diversity	BGD	Percentage of female directors on board.
Blau's index of diversity	BLAU	Blau index for board gender diversity is calculated as $1 - \sum_{i=1}^n P_i^2$, where n is the number of categories (i.e., male and female) and P_i is the percentage of board members in each category. The index ranges from 0 to 0.5. A higher score indicates a higher representation of women on board.
One female director	ONEFD	A dummy variable that is equal to 1 if there is one female director on board and 0 otherwise.
Two female directors	TWOFD	A dummy variable that is equal to 1 if there are two female directors on the board and 0 otherwise.
Three female directors	THREEFD	A dummy variable that is equal to 1 if there are three female directors on the board and 0 otherwise.
Four female directors	FOURFD	A dummy variable that is equal to 1 if there are at least four female directors on the board and 0 otherwise.
Company size	FSIZE	Natural log of total assets of the company.
Profitability	ROA	Percentage of net income to total assets.
Leverage	LEV	Percentage of total debt to total assets.
Board size	BSIZE	Number of directors on board.
Board independence	BINDE	Percentage of independent directors on the board of a company.
Growth opportunities	MTBV	Percentage of the market-to-book value of equity.
CEO duality	DUALITY	A dummy variable that is equal to 1 if the CEO is also the chairman and 0 otherwise.
CSR sustainability committee	CSRCOM	A dummy variable that is equal to 1 if the company has a board CSR sustainability committee and 0 otherwise.
Industry	INDUSTRY	Dummies, representing 10 industries, based on the Industry Classification Benchmark to control for industry effects.
Year	YEAR	Year dummy to control for year effects.

$$MSD_{it} = \alpha_0 + \beta_1 BGD_{it} + \sum_{i=1}^n \beta_i CONTROLS_{it} + \varepsilon_{it} \quad (1)$$

$$MSD_{it} = \alpha_0 + \beta_1 ONEFD_{it} + \beta_2 TWOFD_{it} + \beta_3 THREEFD_{it} + \beta_4 FOURFD_{it} + \sum_{i=1}^n \beta_i CONTROLS_{it} + \varepsilon_{it} \quad (2)$$

where MSD_{it} indicates the MSD score for a company i in year t and BGD_{it} is a proxy of the BGD. $ONEFD_{it}$, $TWOFD_{it}$, $THREEFD_{it}$, and $FOURFD_{it}$ are dummy variables representing one, two, three, and four or more female directors on the board, respectively. $CONTROLS_{it}$ refers to a vector of company-level control variables. All continuous variables are winsorised at 1% and 99% to mitigate the influence of extreme values.

5 | EMPIRICAL RESULTS AND DISCUSSION

5.1 | Corporate MSDs in practice

Table 3 shows the mean values of the MSD scores for the companies included in our sample over the 2016–2020 period. Panel A of Table 3 shows that the MSD scores range from a minimum of 8.69% (4 out of 46 items disclosed) to a maximum of 69.56% (32 out of 46), with an average of 34.26%. These results suggest low MSD levels for the sampled companies. Still, the results reflect a gradual increase in the amount of information disclosed by management over time. For instance, the mean MSD scores increased from 28.30% in 2016 to 37.60% in 2020. This increase in disclosure levels over time is consistent with the literature (e.g., Christ et al., 2019; Flynn & Walker, 2021; FRC, 2022; Rao et al., 2022), suggesting that management may attempt to gain social acceptance, legitimise their operations or

TABLE 3 Summary statistics of corporate modern slavery disclosures.

Panel A: Dependent variable: MSD (%)							
	All	2016	2017	2018	2019	2020	
Mean	34.269	28.300	31.400	35.800	37.600	37.600	
Min	8.696	10.900	8.700	8.700	13.000	13.000	
Max	69.565	54.300	58.700	69.600	67.400	65.200	
Panel B: Categories of MSD (%)							
MSD categories	Mean	Min	Max				
Organisation structure	63.400	0.000	100.000				
Policies	56.300	0.000	100.000				
Due diligence	22.500	0.000	76.900				
Risk assessment and management	28.600	0.000	83.300				
Effectiveness/KPIs	15.100	0.000	83.300				
Training	30.600	0.000	85.700				
Additional features	54.500	0.000	80.000				
Panel C: Univariate analysis for industries with high and low modern slavery risks							
Variables of interest	High-slavery-risk industries			Low-slavery-risk industries			t-test
	Mean	Median	SD	Mean	Median	SD	
MSD	36.10	37.00	11.00	31.40	30.00	10.70	4.40***
Organisation structure	64.10	75.00	23.40	62.40	75.00	22.80	0.78
Policies	57.00	60.00	23.30	55.10	60.00	24.00	0.80
Due diligence	24.50	23.00	11.50	19.50	19.00	11.50	4.41***
Risk assessment and management	31.00	33.00	17.90	25.00	17.00	16.70	3.48***
Effectiveness/KPIs	15.80	0.00	21.40	13.90	0.00	22.00	0.90
Training	33.80	29.00	17.80	25.60	29.00	17.00	4.74***
Additional features	56.90	60.00	19.30	50.80	40.00	20.70	3.13***

Note: This table presents univariate comparisons of MSD measures. Panel C reports the t-statistics for differences in means between industries with high and low levels of modern slavery risk. The definitions of all variables are presented in Table 2.

*Significance for a two-tailed test at 10% level.

**Significance for a two-tailed test at 5% level.

***Significance for a two-tailed test at 1% level.

manage stakeholders' perceptions through more disclosures. This result is consistent with Flynn's (2020) findings, which indicate that increasing companies are disclosing modern slavery voluntarily in response to the UK MSA.

Moreover, Panel B of Table 3 provides a detailed analysis of MSD scores by category. The results show that managers of FTSE 100 companies tend to disclose more information about their organisation structure and supply chains (with an average of 63.40%), modern slavery policies (with an average of 56.30%), and additional modern slavery features such as board approval of a modern slavery statement; the statement is signed by the company's director or equivalent and is posted on the companies' website homepage (54.50%). In contrast, the results show that companies pay less attention to disclosure about the following practices of modern slavery: KPIs (15.10%), due diligence procedures (22.50%), risk assessment and management (28.60%), and training (30.60%). For instance, the majority of companies do not disclose considerable information about engagement in monitoring their impact and actions on modern slavery through KPIs. This evidence corroborates previous studies (e.g., FRC, 2022; Monciardini et al., 2021) that suggest that companies focus largely on symbolic structures, including organisation structure and policies, rather than disclosing substantive modern slavery practices such as KPIs and due diligence in order to minimise regulatory risks and manage stakeholders' perceptions. As stated by Gadd and Broad (2018), many modern slavery statements issued by companies emphasise establishing standards more than implementing remedial measures. Our results also support the evidence provided by Islam and Van Staden (2022), who argue that the MSA's lack of transparency requirements may tend to limit corporate liability and responsibility to combat modern slavery and unethical labour practices.

Further data analysis reveals differences in MSD levels between high-slavery-risk and low-slavery-risk industries. Following prior studies (e.g., Cousins et al., 2020; Rao et al., 2022) that find industry classification may affect MSD level, we ran an independent sample t-test to determine which MSD categories were significantly different between industries with high and low slavery risks.² The t-test results, presented in Panel C of Table 3, show the differences in the mean values of MSD and its categories between industries with high and low slavery risks. The results show that high-slavery-risk industries have a significantly higher MSD level than low-slavery-risk industries, with a mean of 36.10 and 31.40, respectively ($t = 4.40, p < .001$). The results also indicate that industries with a higher risk of slavery tend to exhibit significantly higher levels of MSD and tend to have better disclosure in areas such as due diligence, risk assessment and management, training, and additional features, compared to industries with a lower risk of slavery. Nonetheless, other categories have no significant differences, such as organisation structure, policies, and effectiveness/KPIs.

²Construction, retail, mining, fishing, brick-making, automotive, steel, and agriculture are among the industries posing a high risk of modern slavery, while finance, insurance, and publishing pose a low risk (Cousins et al., 2020).

5.2 | Descriptive analysis and bivariate correlation analyses

Table 4 shows summary statistics for all our analysis's independent and control variables. We find that the percentage of female directors on the board (BGD) ranges from a minimum of 0% to a maximum of 57.1%, with a mean of 29.8% and a standard deviation of 8.84; this result suggests a wide variation of female representation on the board among the sampled companies. The Blau index of gender diversity (BLAU) has a mean of 0.402, suggesting that the boards are becoming more heterogeneous. The results also indicate (un-tabulated) that women's representation on boards has significantly improved across FTSE 100 companies, with the proportion of women increasing from 25.3% in 2016 to 35.2% in 2020. In this regard, the UK government has been pushing for women to play a greater role in corporate governance since 2011. For example, the UK government released the Hampton–Alexander review in 2015, which recommends that companies achieve 33% of women on the boards of FTSE 350 by 2020. More recently, the FTSE Women Leaders Review (2022) sets a target of 40% representation of women on FTSE 350 boards to be achieved by 2025. Our results also show that 6.3% of the sample companies have one female director (ONEFD), 22.8% have two female directors (TWOFD), 33% have three female directors on the board (THREEFD) and 37.8% have four or more female directors on the board (FOURFD) among the UK FTSE 100 largest companies. These results highlight the impact of the recent UK government initiative to increase the representation of women on boards in FTSE companies.

Table 4 further shows that the average board size of the companies is around 10 board members and that around 66% of the board members are independent. These results are consistent with previous studies (e.g., Haque & Jones, 2020; Taurigana & Chithambo, 2015).

TABLE 4 Descriptive statistics of the independent and control variables.

Variables	Mean	Std. dev.	Min	Max
BGD	29.84	8.837	0.000	57.10
BLAU	0.402	0.078	0.000	0.500
ONEFD	6.40	0.245	0.000	100.00
TWOFD	22.80	0.420	0.000	100.00
THREEFD	33.00	0.457	0.000	100.00
FOURFD	37.80	0.480	0.000	100.00
FSIZE	16.581	1.956	11.271	21.199
ROA	7.294	6.592	-2.100	24.900
LEV	25.709	16.668	0.000	58.320
BSIZE	10.338	2.053	3.000	20.000
BINDE	66.112	11.142	44.440	83.330
MTBV	5.152	68.925	-1101.990	759.750
DUALITY	0.043	0.202	0.000	1.000
CSRCOM	0.881	0.324	0.000	1.000

Note: The definitions of all variables are presented in Table 2.

TABLE 5 Correlation analysis.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) MSD	1.000													
(2) BGD	.213 (.000)	1.000												
(3) ONEFD	-.084 (.115)	-.488 (.000)	1.000											
(4) TWOFD	-.163 (.051)	-.214 (.000)	-.262 (.000)	1.000										
(5) THREFFD	-.024 (.618)	.209 (.000)	-.264 (.000)	-.405 (.000)	1.000									
(6) FOURFD	.180 (.000)	.645 (.000)	-.228 (.000)	-.349 (.000)	-.382 (.000)	1.000								
(7) FSIZE	.177 (.000)	.159 (.000)	-.218 (.000)	-.087 (.008)	.148 (.000)	.163 (.000)	1.000							
(8) ROA	-.104 (.036)	.041 (.225)	.092 (.006)	-.016 (.639)	-.062 (.060)	-.025 (.443)	-.506 (.000)	1.000						
(9) LEV	.117 (.018)	.078 (.020)	-.016 (.629)	-.032 (.337)	.018 (.577)	.031 (.344)	-.023 (.488)	.009 (.783)	1.000					
(10) BSIZE	.074 (.131)	.066 (.045)	-.202 (.000)	-.142 (.000)	.114 (.001)	.321 (.000)	.553 (.000)	-.262 (.000)	-.039 (.244)	1.000				
(11) BINDE	.186 (.000)	.328 (.000)	-.267 (.000)	-.078 (.018)	.135 (.000)	.246 (.000)	.368 (.000)	-.216 (.000)	.110 (.001)	.220 (.000)	1.000			
(12) MTBV	-.039 (.425)	.035 (.293)	.001 (.975)	.011 (.735)	.014 (.678)	-.020 (.557)	-.192 (.000)	.214 (.000)	-.057 (.090)	-.080 (.017)	-.041 (.226)	1.000		
(13) DUALITY	-.144 (.003)	-.096 (.004)	.050 (.133)	.042 (.208)	-.049 (.138)	-.067 (.042)	-.147 (.000)	.079 (.019)	-.079 (.018)	-.061 (.066)	-.170 (.000)	-.007 (.845)	1.000	
(14) CSRCOM	.154 (.002)	.044 (.341)	-.200 (.000)	-.020 (.672)	.067 (.146)	.076 (.098)	.391 (.000)	-.219 (.000)	.022 (.636)	.269 (.000)	.114 (.013)	-.174 (.000)	-.020 (.664)	1.000

Note: All variable definitions are presented in Table 2.

Around 95% of companies in our sample have separate CEO and chairman positions. In addition, around 88% of the sampled companies maintain a CSR sustainability committee. Table 4 also shows that the mean values for financial control variables are as follows: Company size (FSIZE) is 16.58, profitability (ROA) is 7.29%, and leverage (LEV) in our sample is 25.71%.

Table 5 shows the Pearson pairwise correlation analysis for all variables used in our regression analyses. It is evident that BGD measures (i.e., BGD and BLAU) are significantly positively correlated with MSD. In addition, we find no association between the presence of one female director and MSD ($\beta = -0.084$, NS). For boards with two female directors, MSD is negatively associated with the presence of two female directors ($\beta = -0.163$, $p < .051$). We have also observed no association between MSD and the presence of three

female board members ($\beta = -0.024$, NS). Nevertheless, this relationship changes when there are four or more female directors on the board; MSD becomes positively related to this threshold of female representation ($\beta = 0.180$, $p < .001$). This result is largely in line with our Hypotheses 1 and 2. Furthermore, we find low correlation values among all independent and control variables, indicating that no significant multicollinearity issue exists. We further confirm this by calculating variance inflation factors (VIFs), and the results (for brevity not reported) revealed no evidence of multicollinearity, as all VIF values do not exceed 2. In addition, we use residual plot and Q-Q plot to test for linearity and normality, respectively, and Durbin-Watson statistics to test for error independence. The results (for brevity not reported) indicate no significant violations of these linear assumptions.

TABLE 6 Board gender diversity and corporate modern slavery disclosures.

Variables	Dependent variable: Company's modern slavery disclosure (MSD) index			
	Model			
	(1) Pooled OLS regression	(2) Pooled OLS regression	(3) Fixed-effects regression	(4) Fixed-effects regression
BGD	0.322*** (0.059)		0.202*** (0.062)	
BLAU		36.980*** (7.097)		22.830*** (7.332)
FSIZE	1.390*** (0.441)	1.389*** (0.442)	1.337*** (0.422)	1.334*** (0.422)
ROA	-0.096 (0.087)	-0.086 (0.087)	-0.004 (0.087)	0.006 (0.087)
LEV	0.070** (0.033)	0.067** (0.034)	0.063** (0.032)	0.062* (0.032)
BSIZE	-0.195 (0.287)	-0.230 (0.288)	-0.170 (0.274)	-0.189 (0.275)
BINDE	0.061 (0.048)	0.057 (0.048)	0.065 (0.046)	0.063 (0.046)
MTBV	-0.002 (0.007)	-0.002 (0.007)	-0.002 (0.006)	-0.002 (0.006)
DUALITY	-4.024 (2.775)	-4.178 (2.774)	-4.573* (2.675)	-4.673* (2.671)
CSRCOM	0.335 (1.993)	0.555 (1.999)	0.774 (1.925)	0.633 (1.927)
INDUSTRY	Yes	Yes	Yes	Yes
YEAR	Yes	Yes	Yes	Yes
Constant	-8.128 (8.805)	-12.47 (9.052)	-3.905 (8.475)	-6.430 (8.735)
No. of observations	394	394	394	394
Adj. R ²	.370	.365	.366	.364

Note: Table 2 outlines variable definitions. Robust standard errors are shown in parentheses.

*Statistical significance at 10% level.

**Statistical significance at 5% level.

***Statistical significance at 1% level.

5.3 | Multivariate results

Table 6 depicts the results of multivariate analyses (OLS and fixed-effects regressions) of the impact of BGD measures (e.g., BGD and BLAU index) on MSD. Using the percentage of female directors as a measure for BGD, Models 1 and 3 show that BGD has a statistically significant positive association with MSD ($\beta = 0.322$, $p < .001$ and $\beta = 0.202$, $p < .001$, respectively). The results remain consistent when using the Blau index as an alternative measurement of BGD. Models 2 and 4 show that BGD proxied by the Blau index has a significant positive relationship with MSD ($\beta = 36.980$, $p < .001$ and $\beta = 22.830$, $p < .001$, respectively). These findings support Hypothesis 1 that female directors on the board are positively associated with the disclosure of modern slavery. In terms of the economic significance of our evidence, an increase in the BGD by one standard deviation (e.g., by using Models 1 and 2 of Table 6) can be expected to increase the MSD by 2.846% (8.837×0.322) and 2.884% (0.078×36.980), respectively. Therefore, the economic significance of having female

board directors is also high with respect to MSDs. These results tend to corroborate the evidence of the related literature (e.g., Al-Shaar & Zaman, 2016; Cabeza-García et al., 2018; Haque & Jones, 2020; Nadeem, 2022; Nekhili et al., 2017) that reveals a significant positive influence of BGD on corporate social and environmental disclosures and performance. This evidence also is consistent with gender socialisation and ethicality theories, which posit that female board members tend to display greater sensitivity to communal values and ethics, express more empathy for societal concerns and actively work to address unethical practices in business, including those relating to modern slavery by implementing measures to improve disclosure practices (see also Cumming et al., 2015; Gilligan, 1977; Gull et al., 2018). Among the control variables, firm size has a positive relationship with MSD in all models. This suggests that larger companies tend to be more transparent in disclosing their modern slavery initiatives. This evidence is consistent with the argument that large firms have higher agency costs and face greater stakeholder pressure to provide transparency. As a result, they tend to disclose more

TABLE 7 Pooled regressions of the board gender diversity and individual categories of MSD.

Variables	Model						
	(1) Organisation structure	(2) Policies	(3) Due diligence	(4) Risk assessment and management	(5) Effectiveness/KPIs	(6) Training	(7) Additional features
BGD	0.194 (0.142)	0.310** (0.134)	0.310*** (0.0661)	0.267** (0.105)	0.395*** (0.133)	0.272** (0.111)	0.233* (0.119)
FSIZE	-0.319 (0.951)	2.139** (0.900)	0.940** (0.443)	2.523*** (0.704)	1.155 (0.892)	1.724** (0.745)	1.772** (0.801)
ROA	0.110 (0.216)	-0.078 (0.205)	-0.193* (0.101)	0.315** (0.160)	-0.247 (0.203)	0.004 (0.169)	-0.144 (0.182)
LEV	-0.012 (0.072)	0.018 (0.068)	0.107*** (0.034)	0.067 (0.053)	-0.003 (0.068)	0.084 (0.056)	0.168*** (0.061)
BSIZE	-1.648** (0.687)	-0.412 (0.651)	0.386 (0.320)	-1.084** (0.509)	0.471 (0.645)	-0.721 (0.539)	-0.400 (0.579)
BINDE	0.156 (0.117)	-0.014 (0.111)	0.035 (0.055)	0.132 (0.087)	-0.0127 (0.110)	0.093 (0.092)	0.061 (0.099)
MTBV	0.008 (0.016)	0.012 (0.015)	0.005 (0.008)	0.003 (0.012)	0.006 (0.015)	-0.006 (0.013)	0.003 (0.014)
DUALITY	5.533 (6.068)	-24.74*** (5.744)	-5.773** (2.828)	-8.399* (4.491)	-4.516 (5.693)	6.804 (4.756)	4.273 (5.111)
CSRCOM	4.994 (4.444)	6.776 (4.207)	1.028 (2.072)	1.558 (3.290)	5.422 (4.170)	1.313 (3.483)	4.790 (3.743)
INDUSTRY	Yes	Yes	Yes	Yes	Yes	Yes	Yes
YEAR	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	62.740*** (15.870)	14.490 (15.020)	-3.159 (7.396)	-17.110 (11.740)	-25.840* (14.890)	-1.275 (12.440)	12.480 (13.360)
No. of observations	394	394	394	394	394	394	394
Adj. R ²	.036	.120	.192	.093	.076	.057	.070

Note: Table 2 outlines variable definitions. Robust standard errors are shown in parentheses.

*Statistical significance at 10% level.

**Statistical significance at 5% level.

***Statistical significance at 1% level.

information to reduce information asymmetry and maintain legitimacy in their operations.

To add depth to the overall results, Table 7 provides a detailed analysis of MSD by categories. The findings of Models 2–7 indicate that BGD has statistically significant positive relationships with specific sub-themes of MSD, namely: policies ($\beta = 0.310$, $p < .05$), due diligence procedures ($\beta = 0.310$, $p < .001$), risk assessment and management ($\beta = 0.267$, $p < .05$), KPIs ($\beta = 0.395$, $p < .001$), training ($\beta = 0.272$, $p < .05$) and additional features ($\beta = 0.233$, $p < .01$). These

results suggest that increasing female representation on board enhances corporate modern slavery policies, disclosures, and performance. Additionally, we re-run Models 1–7 by replacing BGD with an alternative measure of BGD (BLAU index), and the results (un-tabulated) are similar to those reported in Table 7.

The results provide further empirical support to the predictions of the GST in that female board members have higher levels of sensitivity to communal values and ethics (e.g., Cumming et al., 2015; Gilligan, 1977). Female directors are more likely to raise their voices

TABLE 8 Critical mass of female directors on the board and corporate modern slavery disclosures.

Variables	Dependent variable: Company's modern slavery disclosures (MSDs)							
	Model							
	Pooled OLS regression				Fixed-effects regression			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ONEFD	−3.394 (2.626)				−1.536 (2.507)			
TWOFD		−0.394** (1.371)				−0.236* (1.332)		
THREFFD			−1.430 (1.130)				−1.060 (1.080)	
FOURFD				4.870*** (1.210)				3.040*** (1.230)
FSIZE	1.807*** (0.458)	1.756*** (0.453)	1.200*** (0.435)	1.180*** (0.427)	1.778*** (0.434)	1.751*** (0.432)	1.170*** (0.414)	1.160*** (0.411)
ROA	−0.047 (0.099)	−0.043 (0.098)	0.0151 (0.099)	−0.0279 (0.0987)	0.036 (0.096)	0.032 (0.096)	0.089 (0.097)	0.051 (0.098)
LEV	−0.005 (0.006)	−0.006 (0.006)	0.077** (0.034)	0.079** (0.033)	−0.006 (0.005)	−0.006 (0.005)	0.066** (0.032)	0.070** (0.031)
BSIZE	−0.378 (0.331)	−0.481 (0.324)	−0.270 (0.322)	−0.733** (0.337)	−0.250 (0.314)	−0.331 (0.310)	−0.204 (0.306)	−0.505 (0.328)
BINDE	0.063 (0.054)	0.048 (0.054)	0.115** (0.053)	0.092* (0.052)	0.055 (0.051)	0.046 (0.051)	0.104** (0.059)	0.091* (0.051)
MTBV	0.003 (0.007)	0.003 (0.005)	0.001 (0.008)	0.002 (0.007)	0.003 (0.007)	0.003 (0.006)	0.001 (0.006)	0.002 (0.007)
DUALITY	−4.731* (2.787)	−3.370 (2.787)	−4.86* (2.830)	−3.890 (2.790)	−4.864* (2.638)	−4.083 (2.654)	−5.110* (2.690)	−4.450* (2.680)
CSRCOM	1.719 (1.922)	2.148 (1.896)	3.230* (1.930)	3.510* (1.900)	3.281* (1.838)	3.463* (1.820)	4.650** (1.850)	4.730** (1.840)
INDUSTRY	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
YEAR	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	7.248 (7.121)	10.740 (7.180)	5.670 (7.260)	9.970 (7.210)	4.848 (6.772)	7.187 (6.881)	4.480 (6.910)	7.190 (6.960)
No. of observations	394	394	394	394	394	394	394	394
Adj. R ²	.134	.149	.097	.130	.145	.151	.105	.117

Note: Table 2 outlines variable definitions. Robust standard errors are shown in parentheses.

*Statistical significance at 10% level.

**Statistical significance at 5% level.

***Statistical significance at 1% level.

against unethical behaviour, such as modern slavery. For example, the results are consistent with Ibrahim et al.'s (2009) findings, which suggest that female directors have a positive attitude towards ethics and, thus, are more likely to address unethical risks involving modern slavery. These results also are in line with those reported in prior studies indicating that companies with gender-diverse boards are less likely to defend against malpractices, including matters related to financial misconduct, earnings management, security fraud, and environmental violations (e.g., Cumming et al., 2015; Gull et al., 2018; Liu, 2018; Wahid, 2019). Collectively, the results suggest that female directors are more sympathetic to societal issues and tend to reduce malpractices in business, such as those related to modern slavery, by taking action to improve MSDs.

Our second hypothesis posits that female directors on the board need to reach a critical mass of at least three to be able to positively influence corporate MSD. To test this hypothesis, we run OLS and fixed-effects regressions using four dichotomous variables: ONEFD, TWOFD, THREEFD, and FOURFD (see Table 2 for more details). The regression results using the OLS models are presented in Models 1–3 of Table 8.

As reported in Model 1 of Table 8, the presence of only one female on the board (ONEFD) does not significantly impact MSD ($\beta = -3.394$, NS). This result suggests that when a board has only one woman, the female director is perceived as a symbolic representation, as the board is dominated by the majority of male directors, consistent with the tokenism perspective. For two women on the board, Model 2 of Table 8 reports a negative relationship between BGD and MSD (TWOFD) ($\beta = -3.941$, $p < .05$), indicating that alliances and coalitions may be formed between two token women, but these agreements may be difficult to perform (Kanter, 1977). This result supports the evidence of Forbes and Milliken (1999) and Wahid (2019) in that the

presence of one or two women on the board could increase cognitive conflicts and lead to a lack of cohesion. Thus, the under-representation of women on corporate boards (one or two) compromises their ability to exert a positive influence on MSD levels. When they reach a certain threshold of female directors, we begin to observe a positive effect on MSD. Some prior studies suggest a threshold of three women (e.g., Joecks et al., 2013; Liu et al., 2014). However, as shown in Model 3 of Table 8, we continue to observe that the presence of three women on the board is not significantly associated with MSD.

Model 4 of Table 8 shows that reaching a threshold of at least four women (FOURFD) has a significant positive impact on MSD ($\beta = 4.870$, $p < .001$), thus providing empirical support for Hypothesis 2. Re-running the regressions using the fixed-effect model, the results in Table 8, Models 5–8, are consistent with those reported in Models 1–4. This evidence is largely in line with previous studies, which indicate that female representation at the board level should reach a certain level to be able to have a voice and influence board decisions, including corporate disclosures (e.g., Cabeza-García et al., 2018; Gyapong et al., 2021; Lucas-Pérez et al., 2015; Post et al., 2011). Therefore, when women are sufficiently represented on boards, they can play an active role in decision-making, resulting in improved disclosure. These findings extend the existing literature by empirically investigating the effect of various levels of gender diversity on disclosures of modern slavery.

5.4 | Robustness tests

We carry out several analyses to ascertain the robustness of our results. First, following Nadeem (2022), we re-run Equation (1) by using an

TABLE 9 Results for industry-adjusted board gender diversity and corporate modern slavery disclosures.

Variables	Model			
	(1) Adj_MSD	(2) Adj_MSD	(3) MSD	(4) MSD
BGD	0.291*** (0.0564)			
BLAU		34.05*** (6.841)		
Adj_BGD			0.260*** (0.067)	
Adj_BLAU				28.18*** (8.189)
CONTROLS	Yes	Yes	Yes	Yes
INDUSTRY	Yes	Yes	Yes	Yes
YEAR	Yes	Yes	Yes	Yes
Constant	Yes	Yes	Yes	Yes
No. of observations	394	394	394	394
Adj. R^2	.108	.104	.132	.125

Note: Table 2 outlines variable definitions. Robust standard errors are shown in parentheses.

*Statistical significance at 10% level.

**Statistical significance at 5% level.

***Statistical significance at 1% level.

industry-adjusted MSD and industry-adjusted BGD and BLAU to address industry effects. Adj_MSD is an MSD score scaled by industry mean within SIC industries, calculated by year. Also, Adj_BGD and Adj_BLAU are BGD or BLAU divided by mean gender diversity within the SIC industries, calculated by year. The findings reported in Models 1–4 of Table 9 are generally consistent with those presented in Table 6. This suggests that our evidence is robust to industry effects.

Second, to examine whether our results are sensitive to the proxy of a critical mass of female directors, we re-estimate Equation (2) using an alternative measure based on board type. Following prior studies (e.g., Kanter, 1977; Seebeck & Vetter, 2022), we replace the independent variable with three dummy variables reflecting different

types of boards: skewed board (>0% share of female directors <20%), tilted board (\geq 20% share of female directors <40%) and balanced board (\geq 40% share of female directors <60%). Kanter (1977) argues that in skewed boards, women are unlikely to have much influence on decision-making since men dominate them. Also, she points out the importance of having a critical mass of 20% and 40% in an organisation to make a significant impact and that balanced groups can have a great impact. Consequently, they are likely to have a positive impact on MSD. The results of our robustness analysis in Table 10 show that only the coefficient of BALANCED is positive and significant. In line with our main analysis, these results suggest that a critical mass of female directors is necessary to realise the positive effects on MSDs.

TABLE 10 An alternative measure for the critical mass of female directors.

Variables	Dependent variable: Company's modern slavery disclosures (MSDs)					
	Model					
	Pooled OLS regression			Fixed-effects regression		
	(1)	(2)	(3)	(4)	(5)	(6)
SKEWED	-0.484** (1.660)			-0.326** (1.620)		
TILTED		0.064 (1.240)			0.147 (1.180)	
BALANCED			4.350*** (1.560)			2.710*** (1.550)
FSIZE	1.1500*** (0.432)	1.190*** (0.436)	1.180*** (4.320)	1.140*** (4.120)	1.158*** (0.414)	1.160*** (0.413)
ROA	0.010 (0.098)	0.023 (0.100)	-0.008 (0.099)	0.079 (0.096)	0.096 (0.097)	0.067 (0.098)
LEV	0.080** (0.033)	0.077** (0.034)	0.078** (0.033)	0.068** (0.031)	0.065** (0.032)	0.068** (0.032)
BSIZE	-0.291 (0.319)	-0.266 (0.323)	-0.00276 (0.00319)	-0.00224 (0.00305)	-0.00200 (0.00306)	-0.00213 (0.00305)
BINDE	0.098* (0.053)	0.113** (0.054)	0.105** (0.053)	0.093* (0.051)	0.103** (0.050)	0.098* (0.053)
MTBV	0.001 (0.007)	0.001 (0.008)	0.003 (0.007)	0.001 (0.007)	0.001 (0.007)	0.002 (0.007)
DUALITY	-4.040 (2.820)	-4.840* (2.840)	-4.480 (2.810)	-4.540* (2.702)	-5.080* (2.690)	-4.830* (2.750)
CSRCOM	3.230* (1.910)	3.110 (1.930)	3.450* (1.920)	4.610** (1.840)	4.550** (1.850)	4.750** (1.840)
INDUSTRY	Yes	Yes	Yes	Yes	Yes	Yes
YEAR	Yes	Yes	Yes	Yes	Yes	Yes
Constant	7.790 (7.240)	5.450 (7.300)	5.540 (7.200)	5.950 (6.930)	4.210 (6.950)	4.410 (6.890)
No. of observations	394	394	394	394	394	394
Adj. R ²	.113	.093	.111	.112	.103	.110

Note: Table 2 outlines variable definitions. Robust standard errors are shown in parentheses.

*Statistical significance at 10% level.

**Statistical significance at 5% level.

***Statistical significance at 1% level.

As the dependent variable (MSD) has fallen to one side (absolute), no score for MSD is negative or less than zero. In this context, the dependent variable can only be considered positive in nature. The Tobit model, also referred to as censored regression, is designed to estimate linear relationships between variables when there is either left or right censoring for the dependent variable only (Winship & Western, 2016). Therefore, we run the Tobit regression as well since its conditions match our variables, and the results (un-tabulated) are consistent with those presented in Table 8.

Finally, to account for potential endogeneities, we run a dynamic panel GMM that allows us to control for endogeneity by 'internally transforming the data'—transformation refers to a statistical process where a variable's past value is subtracted from its present value

TABLE 11 GMM regressions of board gender diversity and corporate modern slavery disclosures.

Variables	Dependent variable: MSD	
	Model	
	(1) GMM	(2) GMM
Lagged MSD	0.112** (0.046)	0.112** (0.046)
BGD	0.168** (0.066)	
BLAU		19.95** (7.959)
FSIZE	1.511*** (0.383)	1.518*** (0.383)
ROA	-0.081 (0.089)	-0.075 (0.089)
LEV	0.095*** (0.029)	0.094*** (0.029)
BSIZE	-0.188 (0.291)	-0.191 (0.291)
BINDE	0.144*** (0.048)	0.141*** (0.049)
MTBV	0.005 (0.007)	0.005 (0.007)
DUALITY	-6.627*** (2.316)	-6.778*** (2.310)
CSRCOM	0.342 (1.793)	0.249 (1.795)
INDUSTRY	Yes	Yes
YEAR	Yes	Yes
Constant	-5.749 (6.570)	-8.601 (6.824)
No. of observations	350	350

Note: Table 2 outlines variable definitions. Robust standard errors are shown in parentheses.

*Statistical significance at 10% level.

**Statistical significance at 5% level.

***Statistical significance at 1% level.

(Roodman, 2009, p. 86; Wintoki et al., 2012). Specifically, it allows us to control for endogeneity that might be related to the fact that current values of governance variables may be affected by the company's past performance or, more specifically, by the MSD. The results reported in Table 11 are generally similar to those presented in Table 6, thereby suggesting that our evidence is robust to potential endogeneities that may arise from reverse causality, dynamic endogenous regressors, possible omitted variables bias, heteroscedasticity, and simultaneity.

6 | CONCLUSION

This study investigates the extent to which UK companies engage in MSDs and empirically examines the impact of BGD on MSD. Based on a sample of FTSE 100 companies over the period 2016–2020, we developed an index to capture the extent of UK companies' MSD. Albeit being relatively low, the results reflect some improvement in MSD levels by FTSE 100 companies over the period 2016–2020. Our findings suggest that companies focus on symbolic structures like information on organisation structure rather than disclosing substantive modern slavery practices such as KPIs, due diligence, risk assessment and management, and training. This behaviour is probably due to management's attempt to minimise regulatory risks or to manage stakeholders' perceptions. The results also suggest that BGD is significantly and positively associated with corporate MSD levels. Companies with more female representation on the board tend to be more transparent about their strategies and actions related to fighting modern slavery. Furthermore, we find that boards with at least four female directors have a significant positive effect on MSD levels.

Our results have a few theoretical and policy implications. From a theoretical standpoint, our findings support GST. Specifically, the results suggest that female board members have higher levels of sensitivity to communal values and ethics. Thus, they are more likely to raise their voices against unethical behaviour and promote MSDs. In addition, the results lend support to the CMT. Having four or more women on the board is significantly associated with MSD levels. 'Token' female representation on corporate boards of three or fewer does not seem to have a positive impact on MSD levels.

In practical terms, a major policy implication is a need for swift action by the government to motivate companies to disclose more information in a more consistent fashion. The evidence reported in this study indicates relatively low levels of MSDs as well as significant differences between companies. This suggests that the quasi-voluntary nature of Section 54, Transparency in the Supply Chains, of the 2015 UK MSA is unlikely to influence companies to improve MSDs and help stakeholders in assessing the companies' efforts in fighting modern slavery. Therefore, policymakers should enact more regulations or provide guidelines on modern slavery, particularly regarding the content and the structure of modern slavery statement's sections on KPIs, risk assessment, and due diligence. There also should be potential consequences for lack of compliance, such as financial penalties, as suggested by a recent UK government report (HM Government, 2021).

In addition, our results suggest that policymakers should promote the representation of women on corporate boards by revising the current guidance in corporate governance codes. Moreover, policymakers can use these results in setting rules and regulations with explicit guidelines that will motivate companies to take serious proactive action to address modern slavery and prompt companies to be transparent about their modern slavery policies and reporting. The results justify the Hampton–Alexander review call for women to represent at least 33% of UK companies' board membership and the more recent recommendation of the FTSE Women Leaders Review to the target of 40% representation of women on UK corporate boards by 2025. Finally, our results encourage policymakers, businesses, and other stakeholders to promote the UN SDGs, Target 8.7, and move towards a sustainable and equitable society. Given the global drive to foster SDGs, our study provides substantial empirical evidence to policymakers, businesses, and other stakeholders, which can inform their decision-making on modern slavery regulations by promoting gender diversity on corporate boards.

This study has some limitations and avenues for future research. First, our examination focused on company-level disclosure of modern slavery. Future research can investigate how a company and country-level governance interactively influence modern slavery. Second, this study employed a quantitative approach using secondary data. Further studies may consider in-depth case studies and interviews with relevant stakeholders, such as board members, regulators, investors, workers, anti-slavery activists, and journalists, to examine their views on preventing modern slavery. Third, this study examines MSD practices of the top 100 publicly listed UK companies. Scholars may consider exploring this phenomenon for small and medium enterprises (SMEs). Future research can also examine the impact of other corporate leadership features on MSD, such as CEO power and business strategy.

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APPENDIX A: MODERN SLAVERY DISCLOSURE (MSD) INDEX AND AVERAGE DISCLOSURE SCORE FOR EACH ITEM

Disclosure categories/items		Score
(i) Organisation structure		
1	Description of the parent company structure and its subsidiaries (including those outside of the United Kingdom).	0.97
2	Locations of operations (by country).	0.57
3	Composition of the workforce (e.g., number of direct employees and seasonal employees).	0.72
4	Tier 1 suppliers' countries (those with whom a direct contractual relationship exists).	0.27
(ii) Policies		
5	Company leadership responsible for human rights, modern slavery strategy and policy development.	0.68
6	Disclosure of the company's relevant policies and their link to modern slavery.	0.80
7	Disclosure that suppliers and business partners follow company's relevant policies for modern slavery, relevant policies and business partners.	0.53
8	Statement makes references to internationally recognised standards (such as human rights standards, ILO labour rights or the UN guiding principles).	0.48
9	Disclosure of information regarding supplier code of conduct.	0.31
(iii) Due diligence process		
10	Modern slavery risks are assessed before entering into contracts with suppliers.	0.19
11	Provisions related to modern slavery risk factors are included in supplier contracts.	0.32
12	Collaboration with multi-stakeholder group efforts related to modern slavery and level of participation.	0.46
13	Direct engagement with workers in the supply chain as part of monitoring processes or site visits.	0.01
14	Grievance mechanism(s) exists for all workers using anonymous whistleblowing services, such as a helpline or mobile phone app (e.g., whistleblowing services, helpline, and mobile phone app).	0.80
15	Grievance mechanism(s) exists for all workers using trade unions or other worker representative groups.	0.04
16	Grievance mechanism(s) exists for all supply chain workers, whether from the company or by the supplier using anonymous whistleblowing services, such as a helpline or mobile phone app.	0.34
17	Grievance mechanism(s) exists for all supply chain workers, whether from the company or by the supplier using trade unions or other worker representative groups.	0.01
18	Audit conducted by your staff (announced audit).	0.50
19	Third-party audit arranged by your organisation.	0.22
20	Audit conducted by your supplier's staff (ethical audits and site visits).	0.00
21	Third-party audit arranged by your supplier (ethical audits and site visits).	0.00
22	Unannounced audit.	0.03
(iv) Risk assessment and management		
23	Risk assessment of modern slavery is undertaken in its own business.	0.44
24	Risk assessment of modern slavery is undertaken in its supply chain.	0.79
25	Disclosure of modern slavery risks identified in its own business.	0.09
26	Disclosure of modern slavery risks identified in its supply chain (e.g., high-risk sourcing countries, commodities, raw materials, sectors and workforce).	0.21
27	Disclosure of priority areas for action in its operations.	0.04
28	Disclosure of priority areas for action in its supply chain.	0.15

(Continues)



Disclosure categories/items		Score
(v) Effectiveness/KPIs		
29	Disclosure of key performance indicators (KPIs) used to measure the effectiveness of efforts to address modern slavery risks in its own business.	0.25
30	Disclosure of the results and progress of the KPIs for its own business.	0.15
31	Disclosure of key performance indicators (KPIs) used to measure the effectiveness of efforts to address modern slavery risks in its supply chain.	0.21
32	Disclosure of the results and progress of the KPIs for the supply chain.	0.15
33	Disclosure of KPIs developed in collaboration with expert stakeholders (e.g., internal departments, NGOs and consultants).	0.00
34	Disclosure of corrective actions related to modern slavery risk.	0.14
(vi) Training		
35	Training on company policies and standards related to modern slavery risks is provided to relevant personnel, including leadership.	0.84
36	Training is provided to suppliers on modern slavery risks, policies and standards.	0.13
37	Training is provided to the wider community.	0.02
38	Training plans for own staff, including who will receive training on modern slavery, are disclosed.	0.46
39	Training plans for suppliers, including who will receive training on modern slavery, are disclosed.	0.08
40	Description of the format of training (e.g., in-person instruction, video, pamphlet, online and e-learning).	0.45
41	Frequency of training on modern slavery (e.g., quarterly, annually and refresher courses).	0.16
(vii) Additional features		
42	Board approval is mentioned in modern slavery statement.	0.87
43	Signature: The statement is signed by the authorised person.	0.95
44	Company's homepage (website) has a link for its modern slavery statement.	0.91
45	Figures (such as graphs, tables and charts).	0.54
46	Pictures.	0.37

Note: Scoring procedure: 0 = modern slavery item not disclosed by the company and 1 = modern slavery item disclosed by the company.