

## **Concerning Evidence About the Availability of Labour Force Information Within Financial Reports: Investigating Human Capital Reporting Over Time**

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## ORIGINAL ARTICLE OPEN ACCESS

# Concerning Evidence About the Availability of Labour Force Information Within Financial Reports: Investigating Human Capital Reporting Over Time

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## ABSTRACT

No policy requires firms to disclose workforce-level human capital (HC) information on financial reports. We are therefore motivated to capture whether HC (and workforce-related information) reporting quality has changed in 2021 relative to 2011, for the top 25 FTSE-indexed firms. Using a content analysis approach, empirical tests are conducted to determine the extent ethnicity, gender, diversity and inclusion (IEGD) disclosure quality has improved, relative to other important HC disclosures. Empirical results show that HC reporting quality remains low in the United Kingdom. However, reporting quality differs based on HC characteristics. The quality (and quantity) of IEGD disclosures increases. However, other important HC and workforce variables such as well-being, mental health, performance, training and disability do not. Empirical results suggest that HC reporting quality/quantity is dynamic. Contrary to previous studies that surmise British firms disclose diversity/equality information as a superficial branding strategy, our results show that top 25 FTSE indexed firms disclose higher quality IEGD information, consistent with legitimacy theory. However, because some important equality HC and workforce variables are shown to provide relatively lower quality disclosures, the study identifies potential policymaking oversights, provides insights to management about strategies to enhance HC reporting quality and speaks to how potential legislative oversights can negatively impact British society.

## 1 | Introduction

From an accounting perspective, Human capital (HC) refers to the knowledge, ability and skills of a firm's workforce (Lim and Mali 2022). Within the accounting profession, two conflicting views exist regarding the importance of disclosing HC information. First, many argue policymakers contend that because no economic value can be assigned to HC, the types of HC information that may be important to investors are not known (Lim and Mali 2022; Omens et al. 2021; Scraggs 2013). Thus, if the purpose of accounting (financial reporting) is to provide

(potential) investors with information for decision-making purposes (as per IAS 2, IFRS 2018), it can be argued that HC exists outside of the mainstream accounting framework. On the other hand, HC is recognised by many to be a firm's most valuable asset (McCracken et al. 2018). Meta-analysis shows that HC is strongly associated with firm performance (Crook et al. 2011). Moreover, in rare instances where structured-numerical (NUM) HC data is reported on a firm-year basis, investors are shown to integrate HC into decision making (Mali and Lim 2023). These findings are consistent with a resource-based theory view, which implies that the knowledge, skills and

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ability integrated within HC is the basis by which firms can establish a comparative advantage.<sup>1</sup> Therefore, based on an IAS 2 interpretation, one can equally argue that legislation should be implemented to promote the availability of structured-NUM HC information within the mainstream accounting framework.

McCracken et al. (2018) explain that to overcome accounting limitations, sustainability reports are a more suitable venue to disclose HC and workforce-related information. Before 2025, numerous policies have been introduced to promote the availability of HC/workforce-related data within a sustainability reporting framework.<sup>2</sup> From 2025 onwards, CSRD (ESRS S1-3) can be considered the seminal sustainability policy (framework), which will shape how HC and workforce-related information is included on annual reports in Europe. The purpose of CSRD is to 'drive accountability and transparency, while promoting sustainable practices and investments'. The pivot towards disclosing HC/workforce information as a sustainability consideration can be perceived as benefiting society. However, we envision that the trajectory of disclosing HC/workforce-related information as a sustainability consideration can have unforeseen consequences. A recent trend in sustainability reporting is the promotion of good business practice, often associated with ethnicity, gender (diversity) and inclusion (IEGD<sup>3</sup>). As a result, there is the potential that IEGD-related disclosures associated with sustainability reporting may now receive more attention, relative to HC disclosures associated with the knowledge, ability and skills of a firm's workforce,<sup>4</sup> among others. Hence, over time, HC and workforce disclosures on annual reports have the potential to become more aligned with a sustainability interpretation, as opposed to the accounting definition. Thus, the purpose of this study is to investigate how the pivot towards disclosing HC and workforce-related information within a sustainability reporting framework has influenced (i) the extent to which IEGD disclosures (among others) have been promoted, relative to other important HC disclosures, and (ii) the extent to which HC reporting quality has been impacted.

We have several motivations to conduct this study. First, British firms are recognised as having low HC reporting quality in the 2000s (Striukova et al. 2008; Vandemaele et al. 2005). More recently, Lim and Mali (2022) conduct a comparative analysis of HC reporting quality in the United Kingdom and South Korea. They find that British firms possess considerably lower HC reporting quality, relative to South Korean firms. However, British firms are also shown to disclose a higher quantity of HC information over time (McCracken et al. 2018; Duff 2018). The above raises academic tension. More specifically, given that British firms disclose a higher quantity of HC information over time, has HC reporting quality improved, declined or remained static? Guthrie et al. (2004, 2006) assert that the practice of disclosing HC information over and above regulatory requirements can be considered a legitimacy strategy. Based on this assertion, firms may disclose a higher volume of structured-NUM HC information. On the other hand, Cho et al. (2012) explain that sustainability disclosures can be considered a public relations exercise, for example, in instances where data is disclosed as unstructured-narrative (NARR). Given these two incentives, and the pivot towards disclosing HC as a sustainability reporting consideration, we are motivated to discover to what extent 25 FTSE-indexed British firms have made the

decision to legitimise HC strategy/policy, over the passage of time (2011–2021). Evidence that the HC reporting quality of British firms has improved, declined or remained static over the passage of time (10 years), extends Lim and Mali's (2022) study, by explaining the trajectory of HC reporting in the United Kingdom.

Second, as discussed above, because of potential legislative oversights,<sup>5</sup> a reporting framework which incorporates HC information does not exist *per se*. Thus, due to the availability of HC information being at the discretion of firms, comparative analyses that utilise HC data have adopted varying approaches. For example, HC and workforce-related information variables can be included into (4–6) categories for the purpose of empirical tests (Duff 2018; Guthrie et al. 2006; McCracken et al. 2018). Absar et al. (2014) and Lim and Mali (2022) report empirical tests from 16 to 25 separate HC variables, respectively. We accept that selecting a handful of variables or grouping is necessary to conduct empirical tests. However, we also envision that reducing available HC variables diminishes data richness and informativeness. In this study, we identify 39 HC variables (see Table 1: henceforth, HC variables refer to the accounting definition, as well as workforce-related information, as perceived within a sustainability reporting framework), taken from the aforementioned studies, avoiding duplication (Absar et al. 2014; Duff 2018; Guthrie et al. 2006; Lim and Mali 2022; McCracken et al. 2018). We consider that including the highest number of HC variables to be a felicitous approach, because it allows for the identification of HC variables that are rarely disclosed or absent from annual reports. Furthermore, including 39 HC variables provides a basis to share insights associated with equality (as outlined in ESRS S1–3/CSRD), such as those associated with religion, ethnicity, among other diversity characteristics. Based on our findings, the study will contribute to practice by identifying the types of NUM information that may be under-reported on British annual reports in the absence of a HC reporting framework (see Section 5). In summary, based on a legitimacy theoretical framework, we are motivated to provide knowledge about the extent to which well-established HC variables are (not) disclosed on the annual reports of Top-25 FTSE firms. Moreover, we hope that our results can contribute to practice by assisting management in efforts to enhance HC reporting quality for those HC occurrences which are absent.

Third, as identified above, numerous sustainability policies have been introduced to promote the availability of disclosures associated with IEGD. It is recognised that a commitment to a business environment that promotes IEGD-related activities has become a societal expectation (Adams and McPhail 2004; Byrd 2018; Hossain et al. 2021; Gallardo-Gallardo et al. 2015; Jackson et al. 2019; Johnston and Malina 2008). Firms that integrate equality into business activities are shown to enjoy higher levels of innovation and profit (Dickens 1999; Zanoni et al. 2010). Moreover, workforce equality is associated with reputational advantages (Avery and McKay 2006; Burgess et al. 2021; Edwards and Kelan 2011; Windscheid et al. 2018). Thus, there can be an expectation that management has an incentive to disclose high-quality IEGD information. However, Kele and Cassell (2023) provide evidence that low-quality, equality/diversity information is disclosed by British law firms. They surmise equality disclosures can be perceived as nothing

**TABLE 1** | HC variables of interest.

|    |                                                 |    |                                        |
|----|-------------------------------------------------|----|----------------------------------------|
| 1  | Ethnic & Race                                   | 21 | Contract benefit                       |
| 2  | LGBT/LGBT + /LGBTQ/LGBTQ + /sexual orientation  | 22 | Performance                            |
| 3  | Disability/Disabilities                         | 23 | Recruitment                            |
| 4  | Gender                                          | 24 | Entrepreneurship                       |
| 5  | Religious/Religion                              | 25 | Intrapreneurship                       |
| 6  | Age                                             | 26 | Misconduct, discipline, Grievance      |
| 7  | Inclusion                                       | 27 | Graduate                               |
| 8  | Geographical & Location                         | 28 | Apprenticeship                         |
| 9  | Human, Employee, Worker, Civil, Labour Rights   | 29 | Talent                                 |
| 10 | Innovation                                      | 30 | Welfare, Well-being, Engagement        |
| 11 | Maternity, Paternity, Pregnancy                 | 31 | School fees                            |
| 12 | Satisfaction                                    | 32 | Loyalty                                |
| 13 | Education & Training                            | 33 | CEO pay ratio                          |
| 14 | Turnover & Retainment                           | 34 | Pay                                    |
| 15 | Absenteeism                                     | 35 | Performance Share, Employee Share      |
| 16 | Creativity                                      | 36 | Part-time (irregular contact) employee |
| 17 | Number of employees                             | 37 | Full-time Employee                     |
| 18 | Pension & Retirement                            | 38 | Bonus                                  |
| 19 | Illness, Healthcare, Safety, Health, Fatalities | 39 | Pay gap                                |
| 20 | Mental Health                                   |    |                                        |

more than an aesthetic 'branding' exercise. We envision that Kele and Cassell (2023) findings may suggest that not all types of HC/equality information are considered equal. Taken together, we are motivated to discover whether the perceived economic/social benefits and legislative interventions designed to promote IEGD have led to a situation where firms legitimise IEGD activities with higher quality/quantity disclosures in 2021, relative to 2011.

Fourth, with the pivot towards disclosing HC information within a sustainability framework, IEGD disclosures have the potential to receive a different level of prominence on annual reports, relative to other important HC variables. (i) There have been numerous policies introduced to enhance director remuneration transparency (Davies Report 2011; Executive Pay Transparency Policy 2019). Therefore, there can be an expectation that disclosures associated with director remuneration will grow in prominence in a similar fashion to IEGD disclosures. (ii) Guyan and Douglas Oloyede (n.d.), and Khan et al. (2018) argue that the practice of disclosing disability information has lost impetus, because there is an ever-increasing focus on equity eiversity and inclusion (EDI). Therefore, among other important HC disclosures, disability may receive more attention in 2021, but lower prominence relative to IEGD disclosures. (iii) Moreover, some HC disclosures may receive less attention in 2021, relative to 2011.<sup>6</sup> In summary, we are motivated to discover the extent to which HC reporting disclosure expectations have changed for traditional HC disclosures, in relation to IEGD. We envision that the low levels of HC reporting quality identified in the United Kingdom (Lim and Mali 2022), may be explained by IEGD disclosures now receiving more attention, compared to traditional HC disclosures. Evidence consistent with the above can contribute

to knowledge, by providing evidence that legislators/firms may perceive that investors priorities IEGD information over other important HC (traditional) disclosures. However, equally, the promotion of IEGD over other important HC disclosures may be perceived as a legislative oversight. To avoid unnecessary repetition, we extend this argument in Section 5.

Fifth, Industry 4.0 efficiencies will lead to unemployment and reductions in contract quality (Stojanova et al. 2019). Nolan (2011) infers that British employees are vulnerable to changes in employment, as firms prioritise shareholders over employee welfare. Farina et al. (2020) and Koumenta and Williams (2018) surmise that the process of decreasing employee contract quality in the United Kingdom is underway, with zero-hour contracts becoming the norm. Given that there is the potential that HC reporting quality can be low in the United Kingdom, we are motivated to provide a normative perspective to explain how opaque HC reporting quality can impact British society. Sixth, following the introduction of Article 159 in South Korea, firms must disclose NUM HC information at the firm-year level, on a mandatory basis. Therefore, in South Korea, HC information is disclosed in a similar fashion to financial reporting data (Lim and Mali 2018b; Mali and Lim 2019). Lim and Mali (2023, 2024), and Mali and Lim (2023) show that the disclosure of NUM information enables market participants to associate HC quality, business sustainability and firm performance/risk. This study is therefore motivated to speak to how the adoption of a similar policy in the United Kingdom, has the potential to provide new insights to stakeholders.

A content analysis is adopted to capture the levels of HC NUM and NARR occurrences on annual reports in 2011 and 2021. The sample consists of 25 FTSE-indexed firms, ranked within

the top 28 in 2011. Empirical results show that in 2021, firms disclose a higher quantity of HC information, relative to 2011. However, for the 39 variables identified, only a quarter are reported at the director and workforce level, by all firms, using NUM data. Furthermore, when an analysis is conducted using all available HC variables, HC reporting quality is shown not to improve. However, variables associated with pay/salary/compensation have higher levels of NUM occurrences relative to NARR in 2021, compared to 2021. This result is expected, because legislation including the Executive Pay Transparency Policy (2019) requires firms to disclose higher levels of NUM information. More interestingly, IEGD variables are consistently shown to have the highest increase in HC reporting quality/quantity between 2011 and 2021. By comparison, other important HC variables are shown to receive less attention. For example, relative to IEGD, the quality/quantity of 'disability' disclosures is lower. Likewise, IEGD disclosures are reported at roughly double the combined level of other important HC information ([i] Welfare/Well-being, [ii] Mental Health, [iii] Performance and [iv] Education and Training). The only variable to have a lower HC reporting quantity is religiosity disclosures. When the sample is divided into workforce-level HC and director/executive HC, results remain qualitatively indifferent.

To summarise, empirical results show that HC reporting on annual reports is dynamic. Moreover, while the quality of IEGD disclosures improves over the passage of time, as would be expected based on the legitimacy theory assertion, other important HC variables receive relatively less attention. To avoid unnecessary repetition, contributions associated with the above will be discussed in Section 5. The paper proceeds as follows. In Section 2, relevant literature is reviewed, and the hypothesis is introduced. Section 3 includes the research design. Section 4 presents the results of the main and additional analysis. As explained above, Section 5 discusses the results, offers policy suggestions, avenues for future research and concludes.

## 2 | Literature Review & Hypothesis Development

### 2.1 | Literature Review

Intellectual capital<sup>7</sup> is defined as an intangible<sup>8</sup> asset which contributes towards value creation (Bontis 1998; Dumay 2014; Lev and Zambon 2003; Meritum 2002). Of the three forms of intellectual capital (internal/external/human), HC is considered by many to be a firm's most valuable asset (McCracken et al. 2018). However, while HC is considered a key component of business success, HC reporting quality differs on an international basis (Abeysekera and Guthrie 2004; Lim and Mali 2022; Roslender and Dyson 1992; Vergauwen and Van Alem 2005; Wall et al. 2003). HC reporting quality is shown to be low in Anglo-American and other leading economies. Scraggs (2013) surmise a lack of guidance by legislators is a reason why HC reporting quality is low in Australia and Japan. Omens et al. (2021, 11) report that few S&P 100 (U.S.) firms disclose HC information. They infer that because there is 'a lack of understanding and consensus on what metrics companies should be using to measure HC performance in the first place', the Securities and Exchange Commission may not consider that there is a need for HC reporting legislation. Lim and Mali (2022) surmise that because no policy exists to mandate that

British firms disclose comparable HC information on annual reports, HC reporting quality is opaque compared to countries with more stringent reporting practices (see Section 2.2 for an overview of HC reporting in the United Kingdom). Taken together, the literature infers that HC disclosures are informative to market participants because they provide insights about how firms manage their most important asset. However, HC reporting legislation is underdeveloped.

From the 1960s, many suggested that HC should be included on balance sheets as an asset (Hermanson 1963, 1964). However, following Flamholtz (1974, 1975) assertions that firms cannot own employees, use them as a resource or stop individuals from seeking other employment, allocating an asset value to HC has lost impetus. Regardless, McCracken et al. (2018) surmise that this historic and flawed argument still hinders current debates. They assert that due to financial reporting limitations, sustainability reporting is a more suitable venue for HC information. The knowledge embedded in CSR and integrated reports can be used by analysts to make sustainability assertions (CSR: Leung and Gray 2016; Integrated Report: Flower 2015). However, the adoption of integrated reporting is slower than expected (De Villiers and Sharma 2020). Moreover, information included on CSR reports is considered by many to be symbolic (Cho et al. 2012; Merkl-Davies et al. 2011). HC information is therefore disclosed on a nonfinancial reporting basis. In the 2000s, it has been argued that nonfinancial disclosures on annual reports can provide insights to users about firm performance (Caddy 2000; Gowthorpe 2009; Power 2001). More recently, Babington (2021) and Power (2021) argue that the inclusion of structured nonfinancial information can legitimise a firm's business practices in terms of performance and sustainability. In summary, it is acknowledged that mainstream financial reports have limitations. However, as explained in the introduction, firms can elect to disclose structured HC information to offer insights about its people.

Resource-based theory is a well-established lens to associate HC quality and firm performance. Resource-based theory infers that firms are homogeneous in terms of available physical assets available on the open market, therefore, a firm's comparative advantage must be associated with heterogeneous HC characteristics<sup>9</sup> (Edvinsson and Sullivan 1996; Hitt et al. 2016). Resource-based theory studies show that director HC quality has a positive effect on firm performance (Demerjian et al. 2012; Lim and Mali 2018a; Mali and Lim 2022). However, the association between firm-level performance and HC quality is not well-established in empirical studies. While Meta-analysis by Crook et al. (2011) suggests a positive association between HC and firm performance, Rouse and Daellenbach (1999) provide evidence of no association. They assert two potential reasons why no relationship exists. First, because vastly different HC (inputs) and performance (output) proxies are used in countless different studies, it is natural for positive, negative and no association outcomes to be captured. Second, as inferred by Merino (1993) and Stovall and Neill (2017), because investment in HC is an expense, management has an incentive to reduce HC investment to enhance net income. In 2024–2026, this trade-off is exemplified by large-scale redundancies at Facebook, Twitter and Instagram, among others.

HC information is used by market participants to judge managerial effectiveness (Kaliprasad 2006; Tymon et al. 2011). Thus,

as Kim et al. (2010) surmise, information asymmetry associated with the management of HC is an agency problem between stakeholders and firms. To reduce information asymmetry, it is widely reported that firms are electing to disclose higher levels of HC information on a longitudinal basis, over time (Absar et al. 2014; Guthrie et al. 2006; Hong Kong/Australia, South Africa and Bangladesh). In the United Kingdom, Duff (2018) shows that professional accounting firms report higher levels of HC information (compared to structural/relational). Likewise, McCracken et al. (2018) report that large British firms have a greater propensity to disclose HC information over time. However, a caveat exists to the argument that firms are disclosing higher levels of HC information to reduce information asymmetry. Firms that disclose higher levels of HC information enjoy various economic benefits, such as higher market value (Cormier et al. 2009), return on assets (Lin et al. 2012) and lower borrowing costs (Mangena et al. 2010; Salvi et al. 2020). As a result, *ceteris paribus*, management has a strong incentive to disclose HC information, irrespective of disclosure quality.

Management may adopt two strategies when it comes to (HC) disclosure quality. First, O'Donovan (2002) argue that firms that effectively communicate their ideology to society legitimise their reputation. Guthrie et al. (2004, 2006) surmise that the practice of disclosing HC information over and above legislative expectations is a legitimacy strategy. On the other hand, firms are also incentivised to disclose favourable HC information to manage their public image (Abeysekera and Guthrie 2004, 2006; Michelon et al. 2015). Given these two incentives, distinguishing between high/low disclosure (reporting) quality is an important consideration for the extant literature. Readability and linguistic features are shown to enhance disclosure quality (Beattie et al. 2004; El-Haj et al. 2019). Firms with higher levels of disclosure quality are shown to enjoy benefits, such as lower levels of accruals mispricing (Drake et al. 2009; Lobo and Zhou 2001), and increased investment (Brown and Hillegeist 2007). However, disclosure quality as a proxy has a caveat. More specifically, many disclosure-quality proxies reported on financial databases do not incorporate comparable NUM data. Thus, firms can potentially manage linguistic features to enhance disclosure quality. However, in the absence of NUM HC information, market participants are unable to directly compare the HC quality of the same firm on a year-on-year basis, relative to competitors. Taken together, it is surmised that literature can be extended with studies that use a felicitous proxy to distinguish between changes in readability, HC reporting quantity and quality.

Sullivan (1998) surmises that because numerous stakeholders utilise HC information, NARR disclosures can offer useful insights about business strategy. Furthermore, voluntary HC disclosures that do not adhere to a framework can be considered as enhancing the informativeness of accounting data (Beattie and Smith 2010; Fontana and Macagnan 2013). Thus, it can be argued that in some circumstances, qualitative disclosures may be preferable to quantitative disclosures. However, there is a growing acceptance that structured-NUM disclosures are of higher quality, relative to unstructured-NARR (Duff 2018; Melloni 2015). NUM disclosures are considered to hold higher weight, because specified, quantifiable data is more verifiable ex post (Cormier et al. 2009; Hutton et al. 2003; Toms 2002).

Bourveau et al. (2022) surmise that NUM information is more useful to shareholders, relative to NARR, because NUM disclosures are comparable at the firm-year level. Lim and Mali (2022) assert that comparable firm-year (NUM) HC data in a basis by which a South Korean firm's business strategy can be legitimised.<sup>10</sup> On the other hand, the absence of NUM HC information in the United Kingdom increases opaqueness, which provides British firms an opportunity to utilise NARR disclosures to manage their corporate image. In summary, based on the above, we consider that NUM HC disclosures are an instance where management has made the decision to legitimise business activities, with the availability of comparable firm-year data.

Due to the increase in prominence of sustainability reporting in addressing social concerns, the practice of disclosing ethnicity, gender, sexual orientation and inclusion information has gained traction (Amorelli and García-Sánchez 2020). The pay gap can be perceived as both a societal and business issue, in the sense that the jobs that men and women undertake at an organisation can be different, thus are rewarded differently. Numerous studies identify that female employees receive lower pay, relative to male employees, resulting in a gender pay gap (Asanov and Mavlikeeva 2023; Bishu and Alkadry 2017). We surmise that if structured/NUM information relating to employee tenure, education level, contract type, salary, among others, were disclosed on a comparable basis, stakeholders would be able to make more nuanced distinctions relating to the pay gap, hence hold firms accountable.

Equally, due to the identification of business practices that do not promote inclusivity based on characteristics such as sexual orientation, many assert that a firm's commitment to inclusivity should be acknowledged (Ayed and Waxin 2023; Hossain et al. 2020). For various reasons, diversity related information can be perceived important to stakeholders. First, as Cai et al. (2024) explain, firms with a commitment to disclosing ethnicity, race and gender information are more profitable. Moreover, firms with a higher level of diversity can be perceived as enjoying reputational advantages. The disclosure of diversity information associated with race, ethnicity and gender can have a broader scope in addressing social unfairness, rather than being an investor-centric practice. To summarise, a vast literature exists to explain why IEGD disclosures have risen in prominence. Thus, there can be an expectation that IEGD disclosures now receive a high level of attention on annual reports. However, the relative prominence to which IEGD disclosures are promoted, compared to other important HC variables in 2021, is a question left unanswered.

## 2.2 | HC Reporting in the United Kingdom

As discussed in the introduction, because HC reporting exists outside of the HC reporting framework, HC information is disclosed within a sustainability reporting framework. For example, policies such as the Davies Report (2011) have improved the quality of director-level (gender) pay information in the United Kingdom (Davies 2014). Furthermore (to the best of our knowledge), while no previous study provides evidence of the following, there is also the potential that the Executive Pay

Transparency Policy (2019) improves director-level pay information quality. There are also numerous initiatives designed to promote IEGD, by the Financial Conduct Authority FCO (2022), UK Corporate Governance Code (2018, 2024) and the European Union in 2022 (ESRS S1-3 in 2022 and CSRD 2025–2028).

On the other hand, policies/initiatives designed to improve workforce-level HC (WLHC) informativeness are shown not to be accepted by British firms (Lim and Mali 2022); *Accounting for People* (2003); *Department of Trade and Industry consolidated resource initiative* (DTI 2001); *Financial Reporting Council policy* (2014) and the *championing better work and working lives initiative* (CIPD 2017). In summary, there have been legislative interventions and policies implemented to enhance the quality of ‘traditional’ HC information, as well as director salary and IEGD data. However, to what extent these policies have had the desired effect remains a question left unanswered.

### 2.3 | Hypothesis Development

Because British firms are shown to have a propensity to disclose increasingly higher quantities of HC information over time (Duff 2018; McCracken et al. 2018), we surmise that this behaviour is likely continue on an annual basis. However, HC reporting quality in the United Kingdom is low (Lim and Mali 2022; Striukova et al. 2008; Vandemaele et al. 2005). Thus, we believe it is important to distinguish whether, and to the extent, HC reporting quality has improved (legitimacy strategy), or whether only the quantity of disclosures has increased (branding/opportunistic).

Three potential relationships have the potential to exist. First, disclosing HC information above regulatory requirements is considered a legitimacy strategy (Guthrie et al. 2004; Guthrie et al. 2006). Firms that disclose increasing levels of equality disclosures enjoy financial/reputational advantages, inferring that disclosing equality information is consistent with the expectation of stakeholders (Avery and McKay 2006; Burgess et al. 2021; Dickens 1999; Edwards and Kelan 2011; Windscheid et al. 2018; Zanoni et al. 2010). Firms can therefore be perceived as having an incentive to disclose higher levels of equality information. Thus, while Kele and Cassell (2023) assert that British firms disclose equality/diversity information as a superficial ‘branding’ strategy, we envision that top 25 British FTSE firms have an incentive to disclose a higher quality/quantity of specific types of equality/diversity information, as a business legitimacy strategy. It is widely accepted that disclosing equality information such as ethnicity, gender, diversity (sexual orientation) and inclusion is congruent with the expectations of society (Adams and McPhail 2004; Byrd 2018; Hossain et al. 2021; Gallardo-Gallardo et al. 2015; Jackson et al. 2019; Johnston and Malina 2008). Moreover, as discussed in the introduction, the Financial conduct Authority FCO (2022) and UK Corporate Governance Code (2018, 2024) promote the practice of disclosing IEGD information. Thus, based on the consensus that disclosing IEGD information is a perceived social requirement, and there is an increasing trend towards implementing policies to promote IEGD disclosures, we hypothesise that the quality/quantity of IEGD disclosures will

increase over the 2011, 2021 period. In a similar fashion, legislation has been implemented to enhance the quality of salary/pay information (Davies Report 2011; Executive Pay Transparency Policy 2019). Thus, it is also expected the quality (quantity) of disclosures associated with salary/pay information will increase.

Second, some argue that religion is associated with growth, honesty and corporate governance (Autiero and Vinci 2016; Chintrakarn et al. 2017; Dyreng et al. 2012). Thus, disclosures associated with religion can be perceived to be important by some stakeholders. However, as discussed by Savage (2021), there is a decreasing trend in those that identify as being religious in the United Kingdom. Therefore, disclosures associated with religion can be perceived less important over the passage of time. In summary, while workforce religiosity information may be considered important to some stakeholders, firms may be less inclined to disclose workforce-related information associated with religion in 2021, relative to 2011. Third, if the HC quality (NUM/NARR) ratio has not changed from 2011 to 2021, it is an indication that firms do not associate a HC variable with a legitimise strategy. We hypothesise that unless there is a reason to provide higher levels of HC reporting quality to legitimise a business activity, firms will not invest time and resources to significantly modify annual report disclosures. As a result, the majority of HC variables will fall into the ‘no change’ category. Based on the above, the following hypothesis is introduced:

**H1.** *HC variables perceived as requiring business legitimacy will demonstrate higher levels of HC reporting quality in 2021, compared to 2011.*

### 3 | Methodology and Sample Selection

This study adopts a content analysis approach over time. The study's objective is to report on the incremental difference in NUM and NARR HC disclosures on British annual reports between 2011 and 2021. The HC reporting quality proxy is borrowed from Lim and Mali (2022), who argue that higher (lower) levels of NUM disclosures, relative to NARR disclosures is a signal of higher (lower) HC reporting quality. The 39 HC and workforce-related variables utilised in this study (Table 1) are the maximum number of HC variables identified in previous studies, without duplication (Absar et al. 2014; Duff 2018; Guthrie et al. 2006; Lim and Mali 2022; McCracken et al. 2018; Striukova et al. 2008; Vandemaele et al. 2005). We use 39 HC variables for two reasons. First, by including 39 HC variables, it is possible to offer granularity about HC variables not regularly discussed in the literature (i.e., ‘religion’ and ‘age’). Second, as discussed by Lim and Mali (2022), HC reporting quality/quantity in the United Kingdom is lower compared to South Korea. Therefore, it is important to identify gaps in HC reporting practices in the United Kingdom. By including 39 variables, it is possible to discover which HC variables are disclosed and highly visible, are rarely disclosed, are not disclosed or are being disclosed at a higher level over the passage of time.

The sample consists of 25 of the 28 top-ranked firms listed on the FTSE index on January the 1st, 2011. This sample includes 25 out of the top 28 FTSE-listed firms (observations) in 2021, because three have either merged or have been dissolved.

Empirical results using the population of the top 25(28) FTSE firms can be considered a felicitous approach for various reasons. First, the market position of the top 25 firms in 2011 and 2021 has remained relatively stable. Therefore, the sample in 2011 and 2021 refers to the same firms over time (perfect panel). Second, many studies report that the incentives and available resources of market leaders to disclose HC information are different to smaller firms (Abeysekera and Guthrie 2004; Gray et al. 1995; Lim and Mali 2022; Mitchell et al. 1995). Thus, the incentives and resources of our sample can be considered equal. Thirdly, of the firms ranked 28 to 100 in 2011, roughly than 25% have either merged or have been dissolved. 40% have either increased/decreased by 10 positions on the FTSE 100 index. Therefore, if a larger sample was used, the external predictive validity of empirical tests would be reduced. Fourth, as discussed in the limitation section, a similar sample size is used in many previous studies. For completeness, in the limitation section, we discuss why we consider this laborious approach and sample size superior to a larger sample, using an algorithmic approach.

To identify a HC 'occurrence', the study borrows from the approach introduced by Beattie et al. (2004), and implemented in various other studies (Duff 2018; Lim and Mali 2022; McCracken et al. 2018). First, a firm's annual report is downloaded from its website. The annual report is then searched using 106 keywords associated with HC variables (see Appendix 1). When the keyword is recognised in a sentence or table, it is associated with a variable. To identify whether or not an occurrence has occurred, the author reads each HC-associated sentence/table. If the variable is not associated with a HC topic/subject, it is discarded. If a HC variable is identified as an occurrence, it is categorised as a NUM or NARR occurrence. A NARR occurrence is recognised where HC information is disclosed as NARR in a sentence. A NUM occurrence exists where NUM HC data is identified within a sentence. An occurrence where NARR information is included within tables is identified as a NUM occurrence. NUM and NARR occurrences are recognised on a cumulative and independent basis. If a variable, for example 'age' is referenced more than once in a sentence, only a single occurrence is identified. However, if a sentence contains both the 'age' and 'religion' variables, two occurrences would be identified. Likewise, if NUM and NARR 'age' variables are included in a single sentence (or table in the instance of NUM), they would be considered separate occurrences. Cumulative NUM and NARR occurrences are the basis for empirical testing.

Choo Huang et al. (2013) assert that literature assessing and comparing director/executive-level HC (DEHC) and WLHC disclosures is lacking. Furthermore, it is recognised that executive-level HC information provides insights of a firm's likelihood to contribute to society (Attah-Boakyie et al. 2024). Thus, for comparison purposes, DEHC occurrences are analysed in conjunction with WLHC occurrences to enhance informativeness. Pronouns, nouns and agency are analysed to make a distinction. If the occurrence states: 'we are looking to diversify our gender breakdown on the board of directors', agency is clear due to the pronoun 'we' and the noun 'directors'. Hence, this occurrence is listed as DEHC. When a sentence states: 'our employees are making a difference in our community', the nouns/pronouns provide clear agency to identify the occurrence as WLHC. For the few values that are ambiguous (19), at least two authors discussed and determined DEHC/WLHC categorisation. In all other

respects, DEHC follows the same methodology as WLHC. For completeness, we mention that the majority of WLHC data is included in the strategic report. The majority of DEHC occurrences are included in the corporate governance section.

To provide assurances about the accuracy of the data, the following process has been followed. First, the main reviewer read all 50 annual reports (based on the keyword search approach discussed above). The main reviewer categorised each occurrence as NARR and NUM for WLHC and DEHC variables. Next, two other authors selected seven annual reports at random. Both authors then followed an identical approach to the main reviewer. A meeting was held by the reviewers who analysed seven annual reports each. In this meeting, it was found that analysis was virtually identical to the main reviewer. The basis for comparing differences in HC reporting quality/quantity are mean difference *t*-tests. In Tables, positive (negative) *t*-values demonstrate that HC occurrences have increased (decreased) from 2011 to 2021. The  $\Delta$  values are the absolute value of change for each HC variable or ratio. Again, positive (negative)  $\Delta$  demonstrate that HC occurrences have increased (decreased) from 2011 to 2021.

## 4 | Empirical Results

### 4.1 | Descriptive Statistics

Table 2 provides the results of descriptive statistics. In column 1, TOTAL occurrences are ranked from highest to lowest. NARR and NUM occurrences are included for completeness. Out of the population of 50 annual reports (25: 2011 and 25: 2021), 9 out of the top 10 ranked firms are 2021 observations. All of the bottom 20 observations are listed as 2011 firms. For the highest (lowest) ranked 2021 firm, there are a total of occurrences 492 (160). For the highest (lowest) ranked 2021 firm, the highest (lowest) number of total occurrences are 253 (24). The relative ranking column shows the relative value of total occurrences as a percentage of the firm with the highest occurrences ( $492/492 = 1$ ,  $417/492 = 0.85$ , etc.). The relative ranking data show that excluding one 2011 firm (51%), all other 2011 observations have less than 39% of the HC occurrences of the highest-ranked firm in 2021. The above shows that the propensity of firms to provide HC disclosures has increased from 2011 to 2021, consistent with our expectation.

Figure 1, the graphs titled 'HC occurrence: 2021 and 2011' provide a visual representation of TOTAL HC occurrences based on FTSE rankings. The positive trendline shows that firms more highly ranked on the FTSE index disclose higher levels of TOTAL HC information. The results, therefore, suggest that HC occurrences and FTSE ranking are linked.

Table 3 is similar to Table 2, however, TOTAL occurrences are replaced by a HC reporting quality (NUM divided by NARR). Table 3 provides two insights. First, based on the assertion that NUM data is of higher quality compared to NARR, firms in 2011 are shown to have the highest levels of HC reporting quality. This assertion is supported by evidence that of the firms ranked 1 to 10, seven are 2011 observations. Second, the bottom 10 observations are 2011 firms, while firms ranked 11–39 are predominantly 2021 observations. Taken together, these results

**TABLE 2** | Human capital occurrence (raw) panel A.

| HC ranking | Year | FTSE ranking | NARR | NUM | Total | Ratio | Relative ranking |
|------------|------|--------------|------|-----|-------|-------|------------------|
| 1          | 2021 | #2           | 404  | 88  | 492   | 0.18  | 1                |
| 2          | 2021 | #7           | 277  | 140 | 417   | 0.34  | 0.85             |
| 3          | 2021 | #8           | 270  | 147 | 417   | 0.35  | 0.85             |
| 4          | 2021 | #3           | 276  | 119 | 395   | 0.30  | 0.80             |
| 5          | 2021 | #4           | 245  | 118 | 363   | 0.33  | 0.74             |
| 6          | 2021 | #6           | 238  | 107 | 345   | 0.31  | 0.70             |
| 7          | 2021 | #1           | 218  | 114 | 332   | 0.34  | 0.67             |
| 8          | 2021 | #12          | 179  | 79  | 258   | 0.31  | 0.52             |
| 9          | 2011 | #4           | 189  | 64  | 253   | 0.25  | 0.51             |
| 10         | 2021 | #14          | 174  | 68  | 242   | 0.28  | 0.49             |
| 11         | 2021 | #16          | 144  | 96  | 240   | 0.40  | 0.49             |
| 12         | 2021 | #19          | 141  | 97  | 238   | 0.41  | 0.48             |
| 13         | 2021 | #5           | 155  | 80  | 235   | 0.34  | 0.48             |
| 14         | 2021 | #10          | 133  | 85  | 218   | 0.39  | 0.44             |
| 15         | 2021 | #11          | 134  | 79  | 213   | 0.37  | 0.43             |
| 16         | 2021 | #22          | 107  | 96  | 203   | 0.47  | 0.41             |
| 17         | 2021 | #24          | 101  | 98  | 199   | 0.49  | 0.40             |
| 18         | 2021 | #9           | 135  | 62  | 197   | 0.31  | 0.40             |
| 19         | 2011 | #7           | 135  | 58  | 193   | 0.30  | 0.39             |
| 20         | 2021 | #20          | 125  | 65  | 190   | 0.34  | 0.39             |
| 21         | 2021 | #15          | 112  | 67  | 179   | 0.37  | 0.36             |
| 22         | 2021 | #17          | 120  | 59  | 179   | 0.33  | 0.36             |
| 23         | 2011 | #2           | 64   | 111 | 175   | 0.63  | 0.36             |
| 24         | 2021 | #25          | 112  | 63  | 175   | 0.36  | 0.36             |
| 25         | 2021 | #13          | 111  | 62  | 173   | 0.36  | 0.35             |
| 26         | 2021 | #21          | 94   | 74  | 168   | 0.44  | 0.34             |
| 27         | 2021 | #18          | 114  | 46  | 160   | 0.29  | 0.33             |
| 28         | 2011 | #21          | 90   | 69  | 159   | 0.43  | 0.32             |
| 29         | 2021 | #23          | 100  | 54  | 154   | 0.35  | 0.31             |
| 30         | 2011 | #5           | 92   | 49  | 141   | 0.35  | 0.29             |
| 31         | 2011 | #1           | 103  | 37  | 140   | 0.26  | 0.28             |
| 32         | 2011 | #9           | 98   | 41  | 139   | 0.29  | 0.28             |
| 33         | 2011 | #3           | 84   | 48  | 132   | 0.36  | 0.27             |
| 34         | 2011 | #22          | 44   | 59  | 103   | 0.57  | 0.21             |
| 35         | 2011 | #13          | 74   | 28  | 102   | 0.27  | 0.21             |
| 36         | 2011 | #20          | 74   | 26  | 100   | 0.26  | 0.20             |
| 37         | 2011 | #10          | 69   | 28  | 97    | 0.29  | 0.20             |
| 38         | 2011 | #6           | 68   | 25  | 93    | 0.27  | 0.19             |
| 39         | 2011 | #12          | 62   | 23  | 85    | 0.27  | 0.17             |
| 40         | 2011 | #16          | 54   | 27  | 81    | 0.33  | 0.16             |
| 41         | 2011 | #24          | 47   | 33  | 80    | 0.41  | 0.16             |
| 42         | 2011 | #8           | 48   | 31  | 79    | 0.39  | 0.16             |
| 43         | 2011 | #17          | 55   | 22  | 77    | 0.29  | 0.16             |
| 44         | 2011 | #11          | 45   | 31  | 76    | 0.41  | 0.15             |
| 45         | 2011 | #18          | 38   | 31  | 69    | 0.45  | 0.14             |
| 46         | 2011 | #14          | 40   | 8   | 48    | 0.17  | 0.10             |

(Continues)

TABLE 2 | (Continued)

| HC ranking | Year | FTSE ranking | NARR | NUM | Total | Ratio | Relative ranking |
|------------|------|--------------|------|-----|-------|-------|------------------|
| 47         | 2011 | #15          | 26   | 15  | 41    | 0.37  | 0.08             |
| 48         | 2011 | #23          | 15   | 16  | 31    | 0.52  | 0.06             |
| 49         | 2011 | #19          | 18   | 6   | 24    | 0.25  | 0.05             |
| 50         | 2011 | #25          | 19   | 5   | 24    | 0.21  | 0.05             |

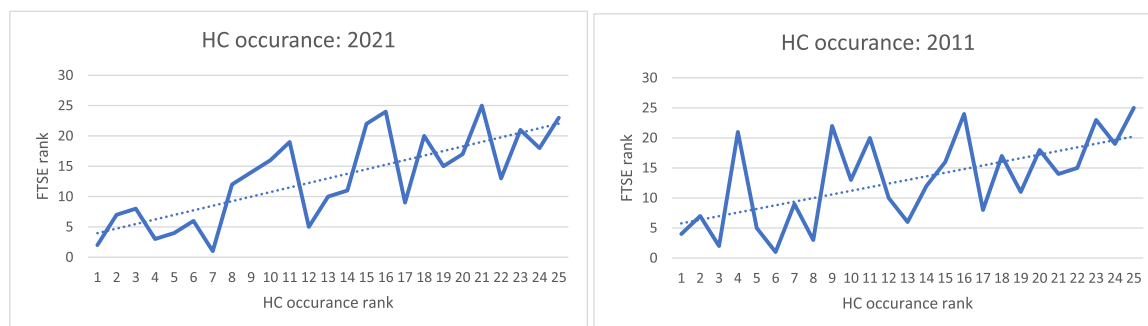


FIGURE 1 | HC disclosure based on FTSE ranking.

provide evidence that firms with the highest levels (lowest) of HC reporting quality in 2011 have lower (higher) levels of HC reporting quality in 2021. The above results therefore infer that HC reporting quality is not a static phenomenon over time.

Figure 2, the graphs titled ‘HC reporting quality: 2021 and 20211’ are a visual representation of the relationship between HC reporting quality and FTSE ranking. The slightly negative trendline shows that firms ranked 20–25 on the FTSE index have higher HC reporting quality compared to firms ranked 1–5. In 2021, the firm ranked 25 on the FTSE index has the highest levels of HC reporting quality. However, in 2021 and 2011, the firm ranked number one on the FTSE index has the 13th and 20th highest HC reporting quality. Combined with evidence from Table 2, the above infers that while top-ranked FTSE firms have higher levels of HC occurrences, higher levels of unstructured NARR information is disclosed, relative to structured and comparable NUM information. The results, therefore, suggest that HC reporting quality and FTSE ranking are not linked.

## 4.2 | Empirical Analysis

Table 4 provides the results of mean difference *t* tests. Empirical results show that Top 25 FTSE firms disclose higher levels of NARR (2.31\*\*), NUM (2.39\*\*) and TOTAL (3.21\*\*\*) HC occurrences in 2021, compared to 2011. In the fourth row, results relating to changes in HC reporting quality, proxied by NUM occurrences divided by NARR are provided. Empirical results show that for the combined total of all 39 HC variables, reporting quality has not increased.

Next, to add granularity, descriptive statistics for 39 HC variables (NARR/NUM/TOTAL) are reported. In Table 5, dark grey shading indicates where sufficient occurrences have been disclosed to conduct *t*-tests: and HIGHER/LOWER financial reporting quality/quantity is captured. Light grey shading shows instances of sufficient HC occurrences to conduct *t*-test, but results are statistically insignificant different. Unshaded areas

are instances where insufficient occurrences exist to conduct the analysis. For completeness, we mention that 25 NARR/NUM occurrences can be interpreted as each of the 25 firms reporting a HC variable. For example, if 201 occurrences exist, it infers that HC variables has been disclosed 8.04 (201/25) times by each firm ‘on average’. If less than 25 occurrences are disclosed, it shows that not all firms disclose information about a HC variable.

In Table 5, we find that due to a lack of disclosures on annual reports, analysis could not be conducted for 16 (NARR), 19 (NUM) and 11 (TOTAL) variables, respectively. This result can be interpreted as follows. Of the sample of 25 firms, insufficient levels of HC NUM occurrences are disclosed by all firms for 19 of the 38 HC variables. This finding supports the assertion that HC reporting is low in the United Kingdom, consistent with Lim and Mali (2022). Second, while occurrence levels are low, empirical results show that occurrences have increased on a statistically significant basis for 17 NARR, 14 NUM and 21 TOTAL HC variables, consistent with our expectation.

Third, nuanced insights can be captured with an analysis of NARR and NUM  $\Delta$  values. The NARR column shows that total occurrences increased by 2472 between 2011 and 2021. Next, we combine the following HC variables: (i) Ethnic + Race, (ii) LGBTQ(+) + Sexual Orientation, (iii) Gender and iv) Inclusion, as a basis to identify IEGD disclosures. 44% of the total  $\Delta$  increase (1074) is related to four IEGD-associated occurrences (Ethnic + race: 176, LGBTQ(+) + Sexual Orientation: 66, Gender: 212 and Inclusion: 620). This finding provides evidence in support of the first hypothesis. More specifically, that in 2021, British firms disclose higher levels of IEGD information.

Fourth, there are a TOTAL of 288 Ethnic + Race, 92 LGBTQ (+) + Sexual Orientation, 615 Gender and 867 Inclusion occurrences, which represent of 30% of TOTAL occurrences (1862/6382). By comparison, Satisfaction is not reported by 15 firms. Furthermore, Welfare + Well-being + Engagement (191), Mental Health (74) and performance (314) and Education and

**TABLE 3** | Ratio of NUM to NARR information.

| Ratio ranking | Year | FTSE ranking | NARR | NUM | Total | Ratio (NUM/NARR) |
|---------------|------|--------------|------|-----|-------|------------------|
| 1             | 2011 | #2           | 64   | 111 | 175   | 0.63             |
| 2             | 2011 | #22          | 44   | 59  | 103   | 0.57             |
| 3             | 2011 | #23          | 15   | 16  | 31    | 0.52             |
| 4             | 2021 | #24          | 101  | 98  | 199   | 0.49             |
| 5             | 2021 | #22          | 107  | 96  | 203   | 0.47             |
| 6             | 2011 | #18          | 38   | 31  | 69    | 0.45             |
| 7             | 2021 | #21          | 94   | 74  | 168   | 0.44             |
| 8             | 2011 | #21          | 90   | 69  | 159   | 0.43             |
| 9             | 2011 | #24          | 47   | 33  | 80    | 0.41             |
| 10            | 2011 | #11          | 45   | 31  | 76    | 0.41             |
| 11            | 2021 | #19          | 141  | 97  | 238   | 0.41             |
| 12            | 2021 | #16          | 144  | 96  | 240   | 0.40             |
| 13            | 2011 | #8           | 48   | 31  | 79    | 0.39             |
| 14            | 2021 | #10          | 133  | 85  | 218   | 0.39             |
| 15            | 2021 | #15          | 112  | 67  | 179   | 0.37             |
| 16            | 2021 | #11          | 134  | 79  | 213   | 0.37             |
| 17            | 2011 | #15          | 26   | 15  | 41    | 0.37             |
| 18            | 2011 | #3           | 84   | 48  | 132   | 0.36             |
| 19            | 2021 | #25          | 112  | 63  | 175   | 0.36             |
| 20            | 2021 | #13          | 111  | 62  | 173   | 0.36             |
| 21            | 2021 | #8           | 270  | 147 | 417   | 0.35             |
| 22            | 2021 | #23          | 100  | 54  | 154   | 0.35             |
| 23            | 2011 | #5           | 92   | 49  | 141   | 0.35             |
| 24            | 2021 | #1           | 218  | 114 | 332   | 0.34             |
| 25            | 2021 | #20          | 125  | 65  | 190   | 0.34             |
| 26            | 2021 | #5           | 155  | 80  | 235   | 0.34             |
| 27            | 2021 | #7           | 277  | 140 | 417   | 0.34             |
| 28            | 2011 | #16          | 54   | 27  | 81    | 0.33             |
| 29            | 2021 | #17          | 120  | 59  | 179   | 0.33             |
| 30            | 2021 | #4           | 245  | 118 | 363   | 0.33             |
| 31            | 2021 | #9           | 135  | 62  | 197   | 0.31             |
| 32            | 2021 | #6           | 238  | 107 | 345   | 0.31             |
| 33            | 2021 | #12          | 179  | 79  | 258   | 0.31             |
| 34            | 2021 | #3           | 276  | 119 | 395   | 0.30             |
| 35            | 2011 | #7           | 135  | 58  | 193   | 0.30             |
| 36            | 2011 | #9           | 98   | 41  | 139   | 0.29             |
| 37            | 2011 | #10          | 69   | 28  | 97    | 0.29             |
| 38            | 2021 | #18          | 114  | 46  | 160   | 0.29             |
| 39            | 2011 | #17          | 55   | 22  | 77    | 0.29             |
| 40            | 2021 | #14          | 174  | 68  | 242   | 0.28             |
| 41            | 2011 | #13          | 74   | 28  | 102   | 0.27             |
| 42            | 2011 | #12          | 62   | 23  | 85    | 0.27             |
| 43            | 2011 | #6           | 68   | 25  | 93    | 0.27             |
| 44            | 2011 | #1           | 103  | 37  | 140   | 0.26             |
| 45            | 2011 | #20          | 74   | 26  | 100   | 0.26             |
| 46            | 2011 | #4           | 189  | 64  | 253   | 0.25             |

(Continues)

TABLE 3 | (Continued)

| Ratio ranking | Year | FTSE ranking | NARR | NUM | Total | Ratio (NUM/NARR) |
|---------------|------|--------------|------|-----|-------|------------------|
| 47            | 2011 | #19          | 18   | 6   | 24    | 0.25             |
| 48            | 2011 | #25          | 19   | 5   | 24    | 0.21             |
| 49            | 2021 | #2           | 404  | 88  | 492   | 0.18             |
| 50            | 2011 | #14          | 40   | 8   | 48    | 0.17             |

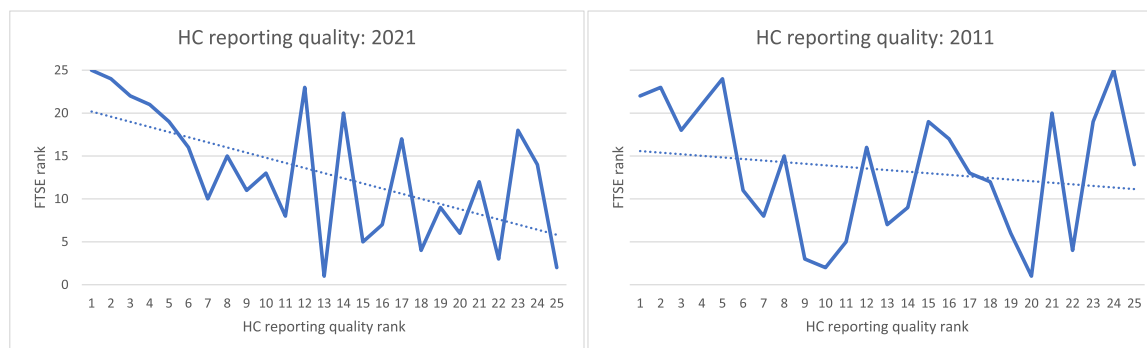


FIGURE 2 | HC reporting quality.

TABLE 4 | Mean difference *t*-tests.

|                | 2011 total | 2011 average | 2021 total | 2021 average | Mean difference <i>t</i> -test results |
|----------------|------------|--------------|------------|--------------|----------------------------------------|
| NARR total     | 1699       | 63           | 4171       | 171.96       | 2.31** ( <i>p</i> -value 0.03)         |
| NUM total      | 843        | 33           | 2211       | 88.88        | 2.39** ( <i>p</i> -value 0.02)         |
| Total          | 2,542      | 96.12        | 6382       | 260.84       | 3.21*** ( <i>p</i> -value 0.00)        |
| Ratio NUM/NARR | 8.62       | 0.33         | 8.77       | 0.35         | 0.02 ( <i>p</i> -value 0.93)           |

Note: \*, \*\*, \*\*\* indicate significance level at 10%, 5%, 1%, respectively.

Training (448) by comparison make up a total of 16% of HC occurrences (1027/6382). These results suggest that while firms have developed strategies to legitimise IEGD, it can equally be argued that other forms of important HC information receive less attention in 2021.

Fifth, in the NUM  $\Delta$  column, there has been a total increase of 1368 on an absolute basis. 33% of this increase in NUM reporting comes from two pay-related HC variables 'pay' (228) and 'CEO pay' (196). IEGD variables represent a 32% increase (Ethnic + Race: 81, LGBTQ(+) + Sexual Orientation: 15, Gender: 288, Inclusion: 57). Taken together, the results infer that pay-related and IEGD disclosures represent the 65% of the total increase in NUM HC disclosures. The results provide further evidence that other important HC variables receive less attention.

In Table 6, details of *t*-test results are provided to compare the ratio of NUM/NARR occurrences for firms in 2011 and 2021, inferring changes in HC reporting quality. The ratio column provides details of NARR information, relative to NUM. A higher value would therefore suggest lower HC reporting quality. The  $\Delta$  column is a NUM representation of the ratio value in 2011, minus the ratio value in 2021. A positive (negative) value in the  $\Delta$  column infers that HC reporting quality has increased (decreased).

Table 6 offers two insights. First, it is not possible to conduct *t*-tests for 14 HC in 2011, because not a single NUM disclosure is provided for these variables by firms in 2011. In 2021, there is some improvement. However, 9 HC variables still do not have NUM disclosures. The above confirms the previous assertion that HC reporting quality is low in the United Kingdom. Second, for the 21 HC occurrences where it is possible to conduct empirical tests, 17 are statistically insignificant and 4 are statistically significantly positive. Of the 4 variables that increased in terms of quality, 3 are variables associated with IEGD (Ethnic + race: *t*-value, 4.27; Gender: *t*-value, 4.41; inclusion: *t*-value, 3.41). This result allows us to accept our hypothesis that British firms disclose higher IEGD HC information to legitimise business activities in 2021, compared to 2011.

### 4.3 | Additional Analysis: Director Versus Employee Analysis

The Davies Report (2011) and the Executive Pay Transparency Policy (2019) are expected to enhance the quality of DEHC disclosures associated with gender and pay. However, as explained in Section 2.2, policies to enhance WLHC reporting quality can be considered as being ineffective. We are therefore interested to discover whether HC reporting practices for DEHC and WLCH are different. Evidence that the quality of WLHC

**TABLE 5** | Comparison of HC disclosures.

| Human capital variables                             | 2011: NARR |      | 2021: NARR |       | Diff |         | 2011: NUM |       | 2021: NUM |     | Diff    |         | 2011: TOTAL |      | 2021: TOTAL |       | Δ   | t-value | p-value |          |       |
|-----------------------------------------------------|------------|------|------------|-------|------|---------|-----------|-------|-----------|-----|---------|---------|-------------|------|-------------|-------|-----|---------|---------|----------|-------|
|                                                     | Total      | Mean | Total      | Mean  | Δ    | t-value | p-value   | Total | Mean      | Δ   | t-value | p-value | Total       | Mean | Total       | Mean  |     |         |         |          |       |
|                                                     |            |      |            |       |      |         |           |       |           |     |         |         |             |      |             |       |     |         |         |          |       |
| Ethnic + Race                                       | 25         | 1.00 | 201        | 8.04  | 176  | 6.74*** | 0.00      | 6     | 0.24      | 87  | 3.48    | 81      | 4.52***     | 0.00 | 31          | 1.24  | 288 | 11.52   | 257     | 8.73***  | 0.00  |
| LGBTQ + + Sexual orientation                        | 11         | 0.44 | 77         | 3.08  | 66   | 4.60*** | 0.00      | 0     | 0.00      | 15  | 0.60    | 15      |             |      | 11          | 0.44  | 92  | 3.68    | 81      | 5.20***  | 0.00  |
| Disability/Disabilities                             | 30         | 1.20 | 83         | 3.32  | 53   | 3.54*** | 0.00      | 0     | 0.00      | 13  | 0.52    | 13      |             |      | 30          | 1.2   | 96  | 3.84    | 66      | 3.87***  | 0.00  |
| Gender                                              | 72         | 2.88 | 284        | 11.36 | 212  | 7.44*** | 0.00      | 43    | 1.72      | 331 | 13.24   | 288     | 9.75***     | 0.00 | 115         | 4.6   | 615 | 24.6    | 500     | 16.14*** | 0.00  |
| Religious/Religion                                  | 19         | 0.76 | 9          | 0.36  | −10  | −1.92** | 0.06      | 0     | 0.00      | 0   | 0.00    | 0       |             |      | 19          | 0.76  | 9   | 0.36    | −10     | −1.80*   | −0.08 |
| Age                                                 | 22         | 0.88 | 51         | 2.04  | 29   | 1.43    | 0.16      | 107   | 4.28      | 101 | 4.04    | −6      | 0.12        | 0.91 | 129         | 5.16  | 152 | 6.08    | 23      | 0.42     | 0.68  |
| Inclusion                                           | 180        | 7.20 | 800        | 32.00 | 620  | 9.26*** | 0.00      | 10    | 0.40      | 67  | 2.68    | 57      | 3.29***     | 0.00 | 190         | 7.6   | 867 | 34.68   | 677     | 7.20***  | 0.00  |
| Geographical + Location                             | 19         | 0.76 | 37         | 1.48  | 18   | 1.52    | 0.14      | 28    | 1.12      | 48  | 1.92    | 20      | 0.94        | 0.35 | 47          | 1.88  | 85  | 3.4     | 38      | 1.58     | 0.12  |
| Human + Employee + Worker + Civil + Labour Rights   | 23         | 0.92 | 103        | 4.12  | 80   | 3.41*** | 0.00      | 1     | 0.04      | 4   | 0.16    | 3       |             |      | 24          | 0.96  | 107 | 4.28    | 83      | 3.33***  | 0.00  |
| Innovation                                          | 0          | 0.00 | 0          | 0.00  | 0    |         |           | 2     | 0.08      | 3   | 0.12    | 1       |             |      | 2           | 0.08  | 3   | 0.12    | 1       |          |       |
| Maternity + Paternity + Pregnancy                   | 2          | 0.08 | 14         | 0.56  | 12   |         |           | 0     | 0.00      | 5   | 0.20    | 5       |             |      | 2           | 0.08  | 19  | 0.76    | 17      |          |       |
| Satisfaction                                        | 8          | 0.32 | 11         | 0.44  | 3    |         |           | 3     | 0.12      | 4   | 0.16    | 1       |             |      | 11          | 0.44  | 15  | 0.6     | 4       | 0.53     | 0.60  |
| Education + Training                                | 140        | 5.60 | 389        | 15.56 | 249  | 4.46*** | 0.00      | 18    | 0.72      | 59  | 2.36    | 41      | 1.84*       | 0.07 | 158         | 6.32  | 448 | 17.92   | 290     | 4.35***  | 0.00  |
| Turnover + Retainment                               | 2          | 0.08 | 5          | 0.20  | 3    |         |           | 3     | 0.12      | 26  | 1.04    | 23      | 2.18**      | 0.03 | 5           | 0.2   | 31  | 1.24    | 26      | 2.40**   | 0.02  |
| Absenteeism                                         | 0          | 0.00 | 5          | 0.20  | 5    |         |           | 0     | 0.00      | 0   | 0.00    | 0       |             |      | 0           | 0     | 5   | 0.2     | 5       |          |       |
| Creativity                                          | 4          | 0.16 | 5          | 0.20  | 1    |         |           | 0     | 0.00      | 0   | 0.00    | 0       |             |      | 4           | 0.16  | 5   | 0.2     | 1       |          |       |
| Illness + Healthcare + Safety + Health + Fatalities | 221        | 8.84 | 458        | 18.32 | 237  | 2.56**  | 0.01      | 35    | 1.40      | 74  | 2.96    | 39      | 1.71*       | 0.09 | 256         | 10.24 | 532 | 21.28   | 276     | 2.69**   | 0.01  |
| Number of employees                                 | 7          | 0.28 | 0          | 0.00  | −7   |         |           | 43    | 1.72      | 102 | 4.08    | 59      | 2.86**      | 0.01 | 50          | 2     | 102 | 4.08    | 52      | 2.20**   | 0.03  |
| Pension + Retirement                                | 153        | 6.12 | 261        | 10.44 | 108  | 2.57**  | 0.01      | 117   | 4.68      | 180 | 7.20    | 63      | 1.90*       | 0.06 | 270         | 10.8  | 441 | 17.64   | 171     | 3.25***  | 0.00  |
| Mental health                                       | 0          | 0.00 | 70         | 2.80  | 70   | 3.82*** | 0.00      | 0     | 0.00      | 4   | 0.16    | 4       |             |      | 0           | 0     | 74  | 2.96    | 74      | 3.95***  | 0.00  |
| Contract benefit                                    | 0          | 0.00 | 0          | 0.00  | 0    |         |           | 0     | 0.00      | 0   | 0.00    | 0       |             |      | 0           | 0     | 0   | 0       | 0       |          |       |
| Performance                                         | 212        | 8.48 | 216        | 8.64  | 4    | 0.08    | 0.94      | 32    | 1.28      | 98  | 3.92    | 66      | 2.42**      | 0.02 | 244         | 9.76  | 314 | 12.56   | 70      | 1.14     | 0.26  |
| Recruitment                                         | 40         | 1.60 | 74         | 2.96  | 34   | 2.12**  | 0.04      | 0     | 0.00      | 3   | 0.12    | 3       |             |      | 40          | 1.6   | 77  | 3.08    | 37      | 2.07**   | 0.04  |
| Entrepreneurship                                    | 0          | 0.00 | 1          | 0.04  | 1    |         |           | 0     | 0.00      | 0   | 0.00    | 0       |             |      | 0           | 0     | 1   | 0.04    | 1       |          |       |
| Intrapreneurship                                    | 0          | 0.00 | 0          | 0.00  | 0    |         |           | 0     | 0.00      | 0   | 0.00    | 0       |             |      | 0           | 0     | 0   | 0       | 0       |          |       |
| Misconduct + Discipline + Grievance                 | 5          | 0.20 | 8          | 0.32  | 3    |         |           | 0     | 0.00      | 0   | 0.00    | 0       |             |      | 5           | 0.2   | 8   | 0.32    | 3       |          |       |
| Apprenticeship                                      | 24         | 0.96 | 35         | 1.40  | 11   | 0.93    | 0.35      | 7     | 0.28      | 23  | 0.92    | 16      | 2.05*       | 0.05 | 31          | 1.24  | 58  | 2.32    | 27      | 1.92**   | 0.06  |
| Talent                                              | 51         | 2.04 | 177        | 7.08  | 126  | 5.41*** | 0.00      | 1     | 0.04      | 2   | 0.08    | 1       |             |      | 52          | 2.08  | 179 | 7.16    | 127     | 4.45***  | 0.00  |
| Welfare + Well-being + Engagement                   | 38         | 1.52 | 137        | 5.48  | 99   | 3.55*** | 0.00      | 15    | 0.60      | 54  | 2.16    | 39      | 2.43**      | 0.02 | 53          | 2.12  | 191 | 7.64    | 138     | 4.34***  | 0.00  |
| School fees                                         | 2          | 0.08 | 1          | 0.04  | −1   |         |           | 1     | 0.04      | 0   | 0.00    | −1      |             |      | 3           | 0.12  | 1   | 0.04    | −2      |          |       |
| Loyalty                                             | 3          | 0.12 | 4          | 0.16  | 1    |         |           | 0     | 0.00      | 0   | 0.00    | 0       |             |      | 3           | 0.12  | 4   | 0.16    | 1       |          |       |
| CEO pay ratio                                       | 0          | 0.00 | 19         | 0.76  | 19   |         |           | 0     | 0.00      | 196 | 7.84    | 196     | 5.77***     | 0.00 | 0           | 0     | 215 | 8.6     | 215     | 6.01***  | 0.00  |
| Pay                                                 | 77         | 3.08 | 192        | 7.68  | 115  | 3.94*** | 0.00      | 73    | 2.92      | 301 | 12.04   | 228     | 4.73***     | 0.00 | 150         | 6     | 493 | 19.72   | 343     | 6.53***  | 0.00  |
| Performance                                         | 78         | 3.12 | 98         | 3.92  | 20   | 0.66    | 0.51      | 67    | 2.68      | 58  | 2.32    | −9      | 0.34        | 0.73 | 145         | 5.8   | 156 | 6.24    | 11      | 0.28     | 0.78  |
| Employee share                                      | 98         | 3.92 | 101        | 4.04  | 3    | 0.10*   | 0.92      | 52    | 2.08      | 30  | 1.20    | −22     | 1.27        | 0.21 | 150         | 6     | 131 | 5.24    | −19     | 0.55     | 0.59  |
| Part-time                                           | 0          | 0.00 | 6          | 0.24  | 6    |         |           | 2     | 0.08      | 11  | 0.44    | 9       |             |      | 2           | 0.08  | 17  | 0.68    | 15      |          |       |
| Full-time                                           | 2          | 0.08 | 13         | 0.52  | 11   |         |           | 12    | 0.48      | 25  | 1.00    | 13      | 0.96        | 0.34 | 14          | 0.56  | 38  | 1.52    | 24      | 1.71*    | 0.09  |

(Continues)

TABLE 5 | (Continued)

| Human capital variables | 2011: NARR |  | 2021: NARR |  | Diff |  |  | 2011: NUM |  |  | 2021: NUM |  |  | Diff |  |  | 2011: TOTAL |  |  | 2021: TOTAL |  |  | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ | p-value | t-value | Δ |
|-------------------------|------------|--|------------|--|------|--|--|-----------|--|--|-----------|--|--|------|--|--|-------------|--|--|-------------|--|--|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|---------|---------|---|
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Note: \*, \*\*, \*\*\* indicate significance level at 10%, 5%, 1%, respectively. Δ refers to absolute difference.

disclosures have increased in a similar fashion to DEHC (which have been mandated via policy) would provide further evidence that British firms choose to disclose IEGD information as a genuine legitimacy strategy.

In Table 7, separate analyses are provided for DEHC and WLHC occurrences. Two findings are discussed from Table 7. First, Panel A provides the results for DEHC data. In terms of statistical significance, the highest increase in NARR occurrences are for IEGD variables (Ethnic + Race: Δ93, *t*-value 5.20; Gender: Δ121, *t*-value, 5.34; Inclusion: Δ 281, *t*-value, 6.30). However, interestingly, in terms of LGBTQ + + Sexual Orientation', there are no disclosures. Moreover, as reported previously, NUM variables associated with compensation have the highest occurrence increase, including CEO Pay (Δ 196: *t*-value, 7.80) and Pay (Δ 277, *t*-value, 6.44). Panel B provides the results for WLHC occurrences. In terms of IEGD there is a statistically significantly higher level of occurrences, consistent with the analysis above DEHC. However, for WLHC, 'LGBTQ + + Sexual Orientation' occurrences are also statistically significantly higher in terms of NARR. This result provides additional support to H.1. More specifically, that regardless of DEHC and WLHC categories, firms disclose higher levels of IEGD information. However, there are nuanced differences associated with 'LGBTQ + + Sexual Orientation'.

Second, in Panel A, it can be seen that WLHC 'disability' disclosures increase at a statistically significant level for NARR (Δ 40, *t*-value, 3.14), but at an insignificant level for NUM. However, very little DEHC disability information is reported. In relation to IEGD disclosures, the levels of total disclosures are considerably lower. Likewise, Total/NARR WLHC 'paternity' and 'Misconduct + Discipline + Grievance' disclosures have increased. However, insufficient information exists for the DEHC sample to conduct empirical tests. The results, therefore, suggest that to some extent, higher levels of WLHC are disclosed. Equally, because there are insufficient disclosures to conduct *t*-tests for 'disability', 'paternity' and 'Misconduct + Discipline + Grievance', the quality of these disclosures can be called into question. More specifically, while firms are disclosing higher levels of WLHC information, quality is low. Third, Panel B, shows that there is a statistically significant reduction in NARR 'Religiosity' occurrences (Δ -10, *t*-value, -2.27). This result infers that British firms have a lower incentive to legitimise their position in terms of religiosity in 2021, compared to 2011.

Table 8 reports the difference in HC reporting quality for WLHC and DEHC information between 2011 and 2021. First, Table 8 shows variables associated with IEGD are shown to have higher levels of HC reporting quality in 2011, compared to 2021 for WLHC occurrences (Ethnic + Race: *t*-value 2.31: *t*-value, Gender 3.55; Inclusion: *t*-value, 2.01). This result provides further evidence in support of H.1. Second, a handful of other variables are shown to have higher levels of HC reporting quality, including 'Education and Training' (*t*-value, 2.27), and 'welfare + well-being + engagement' (*t*-value, -1.76). Third, interestingly, pay-associated WLHC disclosures have decreased in terms of quality (*t*-value, -2.04). This evidence suggests that the increase in NUM disclosures in Table 5 is primarily associated with DEHC, as discussed in Section 2.2. Fourth, in 2021,

only 19 out of 39 WLHC NARR (13 DEHC) variables are reported by all firms (on average). In 2021, only 11 out of 39 NUM WLHC variables (10 for DEHC) are reported by all firms. Taken together, the above provides further evidence that HC reporting quality is low in the United Kingdom.

Table 9 provides a summary of the types of NUM HC information that are/not disclosed by all firms (based on an occurrence of less than 25). In columns 1 and 2, grey text illustrates the HC variables that are disclosed at both WLHC and DEHC level. As shown in Table 9, only 2 variables, 'ethnicity + race' and 'gender' are disclosed by the 25 largest FTSE 100 firms at WLHC and DEHC level. White text in columns 1 and 2 reveals variables that are disclosed by all firms, at either the DEHC or WLHC level. The majority of DEHC variables disclosed by all firms are associated with pay/salary information.<sup>11</sup> On the other hand, the types of NUM data disclosed by all firms on a WLHC basis is varied, including information associated with employee demographics/contracts,<sup>12</sup> employee care/benefit<sup>13</sup> and Inclusion. In columns 3 and 4, grey text identifies HC variables that are not disclosed by all firms at WLHC both DEHC level, white text identifies a situation where HC variables are not disclosed at either DEHC, or WLHC level. Table 9 illustrates that almost half of the identified NUM HC variables are not disclosed at either DEHC or WLHC level. Taken together, the results provide further evidence that top-25 FTSE firms disclose low-quality HC information, however, they are selective in the type of HC variables disclosed.

## 5 | Discussion of Results and Conclusion

The study makes several important contributions. First, NUM information is considered to be of higher quality and more verifiable compared to unstructured NARR disclosures (Bourveau et al. 2022; Duff 2018; Toms 2002). Empirical results reveal that while British firms disclose a higher quantity of HC information over the passage of time, consistent with previous studies (Lim and Mali 2022; Roslender and Stevenson 2009; Striukova et al. 2008; Vandemaale et al. 2005), the quality of HC reporting remains low. NUM information associated with 'Ethnicity + Race' and 'Gender' is disclosed by all firms consistently. The remaining 37 variables are not. The results, therefore, contribute to the literature by providing insights about HC reporting limitations, among the top 25 FTSE firms. The results also contribute to practice with suggestions to management about the types of HC information that require higher levels of reporting quality (as shown in Table 9) to legitimise human resource strategies.

Second, empirical evidence infers that the introduction of policies designed to improve director level pay/gender information has had the desired effect (Davies Report 2011; Executive Pay Transparency Policy 2019). Third, more importantly, empirical evidence shows that the largest increase in HC reporting quantity and quality is associated with IEGD variables. The literature infers that HC reporting can be interpreted from two perspectives. Kele and Cassell (2023) infer that diversity/equality information is disclosed in the United Kingdom superficially as a branding exercise. On the other hand, disclosing this information can be considered a genuine legitimacy strategy (Avery and McKay 2006; Burgess et al. 2021; Dickens 1999; Edwards and Kelan 2011;

Gallardo-Gallardo et al. 2015; Windscheid et al. 2018; Zanoni et al. 2010). Our empirical evidence provides support for the latter, suggesting that while Kele and Cassell (2023) show that British law firms may use equality information for branding purposes, top 25 FTSE-indexed firms adopt a business legitimacy approach. Future studies may use samples from different industries/markets/countries to determine whether results are consistent, or whether it is only the top 25 ranked FTSE firms that have adopted such a strategy.

Fourth, while the quality and quantity of IEGD disclosures increase, other important disclosures now receive less attention on a relative basis ('Welfare + Well-being + Engagement', 'Mental Health', 'Performance', 'Education and Training' and Disability). Various studies show that diversity information reporting receives increasing attention in the United Kingdom, leading to a deficit in other types of HC reporting (Hoque et al. 2014; Jones and Wass 2013). Khan et al. (2018) suggests that the information deficit is due to an overemphasis on EDI disclosures. Guyan and Douglas Oloyede (n.d.) also surmise that important demographic characteristics such as age, disability or socio-economic status are currently under-reported. Empirical findings affirm the above assertions, as in 2021, there are a total of 867 inclusion occurrences, but only 91 disability occurrences. Taken together, an argument can be made that British firms make a contribution by legitimising IEGD information. However, equally it can be argued by over-promoting IEGD reporting, other important firm-level HC information is ignored, which may be to the detriment of the workforce as a whole. Empirical results also show that the reporting quality of religious disclosures decreases over the sample period. We leave it to the reader to make an assertion about these results. In the United Kingdom, this finding can be explained by less of the population identifying as religious (Savage 2021). However, a decrease in faith-associated disclosures may be perceived negatively by some.

The above results can be interpreted differently, based on the inclination and background of the reader. For example, it can be perceived that (i) policymakers have successfully introduced legislation to promote the availability of IEGD data. (ii) Firms consider that disclosing high levels of IEGD are congruent with the expectations of investors, thus, disclose IEGD information on a consistent basis. (iii) The promotion of IEGD disclosures, in the absence of other important traditional HC variables can be considered a legislative oversight. For example, we find that limited part-time contract and employee tenure information are not regularly disclosed by top 25 FTSE firms. A critic may assume that in the United Kingdom, firms disclose IEGD information, which does not incur a cost *per se*. However, disclosures associated with a firm's treatment of employees, which incur a cost, are absent. (iv) The authors of this paper surmise that as a result of the recent introduction of policies design to promote IEGD as a sustainability consideration, policymakers may have overlooked the establishment of legislation, associated with other important/traditional HC disclosures. We encourage future studies to investigate which of the above scenarios are more likely. Future studies may also investigate the preference of investors towards IEGD disclosures, compared to traditional HC disclosures.

Fifth, a normative perspective is provided. Industry 4.0 efficiencies will result in increased unemployment and lower quality contracts (Stojanova et al. 2019). Critical scholars argue that UK employees are vulnerable to changes in employment,

TABLE 6 | Ratio analysis.

| Human capital variables                             | 2011: NARR |      |       | 2011: NUM |      |       | 2021: NARR |      |       | 2021: NUM |      |         | Δ    | t-value | p-value |
|-----------------------------------------------------|------------|------|-------|-----------|------|-------|------------|------|-------|-----------|------|---------|------|---------|---------|
|                                                     | Total      | Mean | Ratio | Total     | Mean | Ratio | Total      | Mean | Ratio | Total     | Mean | Ratio   |      |         |         |
| Ethnic + Race                                       | 25         | 1.00 | 6     | 0.24      | 4    | 201   | 8.04       | 87   | 3.48  | 2         | 2    | 4.27*** | 0.00 |         |         |
| LGBTQ+ + Sexual Orientation                         | 11         | 0.44 | 0     | 0.00      |      | 77    | 3.08       | 15   | 0.60  | 5         |      |         |      |         |         |
| Disability/Disabilities                             | 30         | 1.20 | 0     | 0.00      |      | 83    | 3.32       | 13   | 0.52  | 6         |      |         |      |         |         |
| Gender                                              | 72         | 2.88 | 43    | 1.72      | 2    | 284   | 11.36      | 331  | 13.24 | 1         | 1    | 4.41*** | 0.00 |         |         |
| Religious/Religion                                  | 19         | 0.76 | 0     | 0.00      |      | 9     | 0.36       | 0    | 0.00  |           |      |         |      |         |         |
| Age                                                 | 22         | 0.88 | 107   | 4.28      | 0    | 51    | 2.04       | 101  | 4.04  | 1         | 0    | 1.58    | 0.12 |         |         |
| Inclusion                                           | 180        | 7.20 | 10    | 0.40      | 18   | 800   | 32.00      | 67   | 2.68  | 12        | 6    | 3.41*** | 0.00 |         |         |
| Geographical + Location                             | 19         | 0.76 | 28    | 1.12      | 1    | 37    | 1.48       | 48   | 1.92  | 1         | 0    | 0.81    | 0.42 |         |         |
| Human + Employee + Worker + Civil + Labour Rights   | 23         | 0.92 | 1     | 0.04      | 23   | 103   | 4.12       | 4    | 0.16  | 26        | -3   | -1.38   | 0.17 |         |         |
| Innovation                                          | 0          | 0.00 | 2     | 0.08      | 0    | 0     | 0.00       | 3    | 0.12  | 0         |      |         |      |         |         |
| Maternity + Paternity + pregnancy                   | 2          | 0.08 | 0     | 0.00      |      | 14    | 0.56       | 5    | 0.20  | 3         |      |         |      |         |         |
| Satisfaction                                        | 8          | 0.32 | 3     | 0.12      | 3    | 11    | 0.44       | 4    | 0.16  | 3         | 0    | 0.13    | 0.90 |         |         |
| Education + training                                | 140        | 5.60 | 18    | 0.72      | 8    | 389   | 15.56      | 59   | 2.36  | 7         | 1    | 2.38**  | 0.02 |         |         |
| Turnover + retainment                               | 2          | 0.08 | 3     | 0.12      | 1    | 5     | 0.20       | 26   | 1.04  | 0         | 0    | 1.66    | 0.11 |         |         |
| Absenteeism                                         | 0          | 0.00 | 0     | 0.00      |      | 5     | 0.20       | 0    | 0.00  |           |      |         |      |         |         |
| Creativity                                          | 4          | 0.16 | 0     | 0.00      |      | 5     | 0.20       | 0    | 0.00  |           |      |         |      |         |         |
| Illness + Healthcare + safety + Health + Fatalities | 221        | 8.84 | 35    | 1.40      | 6    | 458   | 18.32      | 74   | 2.96  | 6         | 0    | 1.03    | 0.31 |         |         |
| Number of employees                                 | 7          | 0.28 | 43    | 1.72      | 0    | 0     | 0.00       | 102  | 4.08  | 0         | 0    | 1.02    | 0.31 |         |         |
| Pension + Retirement                                | 153        | 6.12 | 117   | 4.68      | 1    | 261   | 10.44      | 180  | 7.20  | 1         | 0    | 0.06    | 0.95 |         |         |
| Mental Health                                       | 0          | 0.00 | 0     | 0.00      |      | 70    | 2.80       | 4    | 0.16  | 18        |      |         |      |         |         |
| Contract benefit                                    | 0          | 0.00 | 0     | 0.00      |      | 0     | 0.00       | 0    | 0.00  |           |      |         |      |         |         |
| Performance                                         | 212        | 8.48 | 32    | 1.28      | 7    | 216   | 8.64       | 98   | 3.92  | 2         | 4    | 1.46    | 0.15 |         |         |
| Recruitment                                         | 40         | 1.60 | 0     | 0.00      |      | 74    | 2.96       | 3    | 0.12  |           |      |         |      |         |         |
| Entrepreneurship                                    | 0          | 0.00 | 0     | 0.00      |      | 1     | 0.04       | 0    | 0.00  |           |      |         |      |         |         |
| Intrapreneurship                                    | 0          | 0.00 | 0     | 0.00      |      | 0     | 0.00       | 0    | 0.00  |           |      |         |      |         |         |
| Misconduct + Discipline + Grievance                 | 5          | 0.20 | 0     | 0.00      |      | 8     | 0.32       | 0    | 0.00  |           |      |         |      |         |         |
| Apprenticeship                                      | 24         | 0.96 | 7     | 0.28      | 3    | 35    | 1.40       | 23   | 0.92  | 2         | 2    | 0.15    | 0.88 |         |         |
| Talent                                              | 51         | 2.04 | 1     | 0.04      | 51   | 177   | 7.08       | 2    | 0.08  | 89        | -38  | -1.08   | 0.29 |         |         |
| Welfare + Well-being + Engagement                   | 38         | 1.52 | 15    | 0.60      | 3    | 137   | 5.48       | 54   | 2.16  | 3         | 0    | 1.64    | 0.11 |         |         |
| School fees                                         | 2          | 0.08 | 1     | 0.04      | 2    | 1     | 0.04       | 0    | 0.00  |           |      |         |      |         |         |
| Loyalty                                             | 3          | 0.12 | 0     | 0.00      |      | 4     | 0.16       | 0    | 0.00  |           |      |         |      |         |         |

(Continues)

TABLE 6 | (Continued)

| Human capital variables | 2011: NARR |      |  | 2011: NUM |      |  | 2021: NARR |      |   | 2021: NUM |       |  | Ratio | $\Delta$ | <i>t</i> -value | <i>p</i> -value |
|-------------------------|------------|------|--|-----------|------|--|------------|------|---|-----------|-------|--|-------|----------|-----------------|-----------------|
|                         | Total      | Mean |  | Total     | Mean |  | Total      | Mean |   | Total     | Mean  |  |       |          |                 |                 |
| CEO pay ratio           | 0          | 0.00 |  | 0         | 0.00 |  | 19         | 0.76 |   | 196       | 7.84  |  |       |          |                 |                 |
| Pay                     | 77         | 3.08 |  | 73        | 2.92 |  | 192        | 7.68 |   | 301       | 12.04 |  | 1     | 0        | 0.73            | 0.47            |
| Performance             | 78         | 3.12 |  | 67        | 2.68 |  | 98         | 3.92 | 1 | 58        | 2.32  |  | 2     | -1       | -1.37           | 0.18            |
| Employee share          | 98         | 3.92 |  | 52        | 2.08 |  | 101        | 4.04 | 2 | 30        | 1.20  |  | 3     | -1       | -0.59           | 0.56            |
| Part-time               | 0          | 0.00 |  | 2         | 0.08 |  | 6          | 0.24 | 0 | 11        | 0.44  |  |       |          |                 |                 |
| Full-time               | 2          | 0.08 |  | 12        | 0.48 |  | 13         | 0.52 | 0 | 25        | 1.00  |  | 1     | 0        | 1.63            | 0.11            |
| Bonus                   | 131        | 5.24 |  | 165       | 6.60 |  | 160        | 6.40 | 1 | 230       | 9.20  |  | 1     | 0        | 0.21            | 0.83            |
| Pay gap                 | 0          | 0.00 |  | 0         | 0.00 |  | 66         | 2.64 |   | 57        | 2.28  |  |       |          |                 |                 |
|                         | 1699       |      |  | 843       |      |  | 4171       |      |   | 2211      |       |  |       |          |                 |                 |

Note: \*, \*\*, \*\*\* indicate significance level at 10%, 5%, 1%, respectively.  $\Delta$  refers to absolute difference.

as British firms consider profit before employee welfare (Jackson et al. 2019; Nolan 2011). Farina et al. (2020) and Koumenta and Williams (2018) affirm the above with evidence that zero-hour contracts are becoming the norm in the United Kingdom. Labour Unions require transparent HC information for collective bargaining purposes (David Mautz 1990). However, we show that British annual reports offer limited HC reporting quality for many important HC issues. Thus, we surmise that a trade-off exists between reporting IEGD information and other types of important contract-level information.

Sixth, the study raises important questions about the purpose of HC reporting in the United Kingdom. In the United Kingdom, limited data is available to make an assessment about perceived HC quality. The United Kingdom (EU) is in the process of introducing new policies designed to enhance HC reporting quality.<sup>14</sup> However, previous attempts to improve WLHC reporting quality have not had the desired effect<sup>15</sup> (see Section 2.2). On the other hand, South Korea mandates that traditional forms of HC information<sup>16</sup> must be disclosed on annual reports on mandatory basis (Article 159). This policy has been introduced because South Korean legislators considered investment in HC to be a national productivity strategy, due to a lack of natural resources on the Korean peninsula (Kim et al. 2010). South Korean market participants are therefore in a position to make inferences about the effect of perceived HC quality (employee tenure and contract quality) on business risk/performance (Mali and Lim 2023; Lim and Mali 2023; Lim et al. 2025). However, a similar analysis is not possible in the United Kingdom. We therefore encourage British policymakers to adopt a policy similar to Article 159, to enhance the informativeness of accounting data. We consider the introduction of a similar policy to Article 159 in the United Kingdom, can provide valuable insights to numerous stakeholders. If such a policy were to be introduced, industrial relations practitioners are likely to be in a stronger position to evaluate contract quality, employee tenure, among other HC determinants to hold specific firms accountable; based on their treatment of employees; for collective bargaining purposes; and as a basis to establish labour laws. Furthermore, we surmise that economists interested in addressing the British productivity puzzle, may consider the availability of specific firm-level HC (quality) data, an important step in add granularity to explain the association between HC and national productivity.<sup>17</sup> Finally, additional avenues of research and limitations are discussed. This study uses a sample of 25 firms on a longitudinal basis, over time. We believe that this approach is robust, as previous studies used a similar sample size (Abeysekera and Guthrie 2004; Duff 2018; Lim and Mali 2022). The data is a (perfect) panel of top 25 FTSE firms, therefore, the incentive of these firms can be considered equal (Gray et al. 1995; Mitchell et al. 1995). Furthermore, we believe that coding large datasets is no substitute to reading annual reports to make accurate assessments of HC disclosures. Future studies may repeat this analysis using an algorithm. Using an algorithm will enhance the sample size. However, we believe that the use of an algorithm reduces richness in terms of DEHC and WLHC level data interpretation. In short, we believe that

TABLE 7 | DEHC versus WLHC analysis: Panel A.

| Panel A DEHC data<br>Human capital variables        | 2011:     |      |           |       | 2021:     |         |           |     | 2011:    |       |          |     | 2021: DEHC NUM |       |          |      | 2011:      |       |            |          | 2021: DEHC TOTAL |   |            |       | 2021: DEHC |   |         |       |
|-----------------------------------------------------|-----------|------|-----------|-------|-----------|---------|-----------|-----|----------|-------|----------|-----|----------------|-------|----------|------|------------|-------|------------|----------|------------------|---|------------|-------|------------|---|---------|-------|
|                                                     | DEHC NARR |      | DEHC NARR |       | DEHC NARR |         | DEHC NARR |     | DEHC NUM |       | DEHC NUM |     | DEHC NUM       |       | DEHC NUM |      | DEHC TOTAL |       | DEHC TOTAL |          | DEHC TOTAL       |   | DEHC TOTAL |       | DEHC       |   |         |       |
|                                                     | Total     | Mean | Total     | Mean  | Δ         | t-value | p-val     | Δ   | Mean     | Total | Mean     | Δ   | t-value        | p-val | Δ        | Mean | Total      | Mean  | Δ          | t-value  | p-val            | Δ | Mean       | Total | Mean       | Δ | t-value | p-val |
| Ethnic + Race                                       | 2         | 0.08 | 95        | 3.8   | 93        | 5.20*** | 0.00      | 1   | 0.04     | 47    | 1.88     | 46  | 4.21***        | 0.00  | 3        | 0.12 | 142        | 5.68  | 139        | 7.07***  | 0.00             |   |            |       |            |   |         |       |
| LGBTQ+ + sexual Orientation                         | 0         | 0    | 13        | 0.52  | 13        |         |           | 0   | 0        | 2     | 0.08     | 2   |                |       | 0        | 0    | 15         | 0.6   | 15         | 3.65***  | 0.00             |   |            |       |            |   |         |       |
| Disability/Disabilities                             | 5         | 0.2  | 18        | 0.72  | 13        |         |           | 0   | 0        | 1     | 0.04     | 1   |                |       | 5        | 0.2  | 19         | 0.76  | 14         |          |                  |   |            |       |            |   |         |       |
| Gender                                              | 36        | 1.44 | 157       | 6.28  | 121       | 5.34*** | 0.00      | 25  | 1        | 169   | 6.76     | 144 | 7.15***        | 0.00  | 61       | 2.44 | 326        | 13.04 | 265        | 10.49*** | 0.00             |   |            |       |            |   |         |       |
| Religious/Religion                                  | 2         | 0.08 | 2         | 0.08  | 0         |         |           | 0   | 0        | 0     | 0        | 0   |                |       | 2        | 0.08 | 2          | 0.08  | 0          |          |                  |   |            |       |            |   |         |       |
| Age                                                 | 5         | 0.2  | 22        | 0.88  | 17        | 1.39    | 0.17      | 98  | 3.92     | 82    | 3.28     | -16 | 0.33           | 0.74  | 103      | 4.12 | 104        | 4.16  | 1          | 0.02     | 0.98             |   |            |       |            |   |         |       |
| Inclusion                                           | 78        | 3.12 | 359       | 14.36 | 281       | 6.30*** | 0.00      | 2   | 0.08     | 21    | 0.84     | 19  | 2.86**         | 0.01  | 80       | 3.2  | 380        | 15.2  | 300        | 4.71***  | 0.00             |   |            |       |            |   |         |       |
| Geographical + Location                             | 9         | 0.36 | 18        | 0.72  | 9         | 1.17    | 0.25      | 1   | 0.04     | 17    | 0.68     | 16  | 1.13           | 0.26  | 10       | 0.4  | 35         | 1.4   | 25         | 1.58     | 0.12             |   |            |       |            |   |         |       |
| Human + Employee + Worker + Civil + Labour rights   | 2         | 0.08 | 1         | 0.04  | -1        |         |           | 0   | 0        | 0     | 0        | 0   |                |       | 2        | 0.08 | 1          | 0.04  | -1         |          |                  |   |            |       |            |   |         |       |
| Innovation                                          | 0         | 0    | 0         | 0     | 0         |         |           | 0   | 0        | 0     | 0        | 0   |                |       | 0        | 0    | 0          | 0     | 0          |          |                  |   |            |       |            |   |         |       |
| Maternity + Paternity + Pregnancy                   | 0         | 0    | 2         | 0.08  | 2         |         |           | 0   | 0        | 0     | 0        | 0   |                |       | 0        | 0    | 2          | 0.08  | 2          |          |                  |   |            |       |            |   |         |       |
| Satisfaction                                        | 2         | 0.08 | 1         | 0.04  | -1        |         |           | 0   | 0        | 0     | 0        | 0   |                |       | 2        | 0.08 | 1          | 0.04  | -1         |          |                  |   |            |       |            |   |         |       |
| Education + Training                                | 40        | 1.6  | 109       | 4.36  | 69        | 3.05*** | 0.00      | 2   | 0.08     | 6     | 0.24     | 4   |                |       | 42       | 1.68 | 115        | 4.6   | 73         | 2.71**   | 0.01             |   |            |       |            |   |         |       |
| Turnover + Retainment                               | 0         | 0    | 0         | 0     | 0         |         |           | 0   | 0        | 0     | 0        | 0   |                |       | 0        | 0    | 0          | 0     | 0          |          |                  |   |            |       |            |   |         |       |
| Absenteeism                                         | 0         | 0    | 0         | 0     | 0         |         |           | 0   | 0        | 0     | 0        | 0   |                |       | 0        | 0    | 0          | 0     | 0          |          |                  |   |            |       |            |   |         |       |
| Creativity                                          | 1         | 0.04 | 1         | 0.04  | 0         |         |           | 0   | 0        | 0     | 0        | 0   |                |       | 1        | 0.04 | 1          | 0.04  | 0          |          |                  |   |            |       |            |   |         |       |
| Illness + Healthcare + Safety + Health + Fatalities | 40        | 1.6  | 103       | 4.12  | 63        | 2.04*   | 0.05      | 5   | 0.2      | 4     | 0.16     | -1  |                |       | 45       | 1.8  | 107        | 4.28  | 62         | 1.82**   | 0.07             |   |            |       |            |   |         |       |
| Number of employees                                 | 6         | 0.24 | 0         | 0     | -6        |         |           | 1   | 0.04     | 17    | 0.68     | 16  |                |       | 7        | 0.28 | 17         | 0.68  | 10         | 1.13     | 0.26             |   |            |       |            |   |         |       |
| Pension + Retirement                                | 127       | 5.08 | 201       | 8.04  | 74        | 2.23**  | 0.03      | 114 | 4.56     | 158   | 6.32     | 44  | 2.17**         | 0.03  | 241      | 9.64 | 359        | 14.36 | 118        | 3.10***  | 0.00             |   |            |       |            |   |         |       |
| Mental Health                                       | 0         | 0    | 8         | 0.32  | 8         |         |           | 0   | 0        | 0     | 0        | 0   |                |       | 0        | 0    | 8          | 0.32  | 8          |          |                  |   |            |       |            |   |         |       |
| Contract benefit                                    | 0         | 0    | 0         | 0     | 0         |         |           | 0   | 0        | 0     | 0        | 0   |                |       | 0        | 0    | 0          | 0     | 0          |          |                  |   |            |       |            |   |         |       |
| Performance                                         | 175       | 7    | 180       | 7.2   | 5         | 0.12    | 0.90      | 31  | 1.24     | 98    | 3.92     | 67  | 2.82**         | 0.01  | 206      | 8.24 | 278        | 11.12 | 72         | 1.37     | 0.18             |   |            |       |            |   |         |       |
| Recruitment                                         | 17        | 0.68 | 29        | 1.16  | 12        | 1.23    | 0.22      | 0   | 0        | 1     | 0.04     | 1   |                |       | 17       | 0.68 | 30         | 1.2   | 13         | 1.22     | 0.23             |   |            |       |            |   |         |       |
| Entrepreneurship                                    | 0         | 0    | 1         | 0.04  | 1         |         |           | 0   | 0        | 0     | 0        | 0   |                |       | 0        | 0    | 1          | 0.04  | 1          |          |                  |   |            |       |            |   |         |       |
| Intrapreneurship                                    | 0         | 0    | 0         | 0     | 0         |         |           | 0   | 0        | 0     | 0        | 0   |                |       | 0        | 0    | 0          | 0     | 0          |          |                  |   |            |       |            |   |         |       |
| Misconduct + Discipline + Grievance                 | 0         | 0    | 1         | 0.04  | 1         |         |           | 0   | 0        | 0     | 0        | 0   |                |       | 0        | 0    | 1          | 0.04  | 1          |          |                  |   |            |       |            |   |         |       |
| Apprenticeship                                      | 4         | 0.16 | 8         | 0.32  | 4         |         |           | 0   | 0        | 1     | 0.04     | 1   |                |       | 4        | 0.16 | 9          | 0.36  | 5          |          |                  |   |            |       |            |   |         |       |
| Talent                                              | 17        | 0.68 | 67        | 2.68  | 50        | 3.91*** | 0.00      | 0   | 0        | 0     | 0        | 0   |                |       | 17       | 0.68 | 67         | 2.68  | 50         | 3.22***  | 0.00             |   |            |       |            |   |         |       |
| Welfare + Well-being + Engagement                   | 7         | 0.28 | 20        | 0.8   | 13        | 1.51    | 0.14      | 0   | 0        | 1     | 0.04     | 1   |                |       | 7        | 0.28 | 21         | 0.84  | 14         | 1.56     | 0.12             |   |            |       |            |   |         |       |
| School fees                                         | 2         | 0.08 | 1         | 0.04  | -1        |         |           | 1   | 0.04     | 0     | 0        | -1  |                |       | 3        | 0.12 | 1          | 0.04  | -2         |          |                  |   |            |       |            |   |         |       |
| Loyalty                                             | 0         | 0    | 1         | 0.04  | 1         |         |           | 0   | 0        | 0     | 0        | 0   |                |       | 0        | 0    | 1          | 0.04  | 1          |          |                  |   |            |       |            |   |         |       |
| CEO pay                                             | 0         | 0    | 19        | 0.76  | 19        |         |           | 0   | 0        | 196   | 7.84     | 196 | 7.80***        | 0.00  | 0        | 0    | 215        | 8.6   | 215        | 6.68***  | 0.00             |   |            |       |            |   |         |       |

(Continues)

TABLE 7 | (Continued)

| Panel A DEHC data<br>Human capital variables | 2011: DEHC NARR |         |       |      | 2021: DEHC NARR |         |       |     | 2011: DEHC NUM |         |       |     | 2021: DEHC NUM |         |       |       | 2011: DEHC TOTAL |         |       |         | 2021: DEHC TOTAL |         |       |  | p-value |
|----------------------------------------------|-----------------|---------|-------|------|-----------------|---------|-------|-----|----------------|---------|-------|-----|----------------|---------|-------|-------|------------------|---------|-------|---------|------------------|---------|-------|--|---------|
|                                              | Total           |         | Mean  |      | Total           |         | Mean  |     | Total          |         | Mean  |     | Total          |         | Mean  |       | Total            |         | Mean  |         | Total            |         |       |  |         |
|                                              |                 |         |       |      |                 |         |       |     |                |         |       |     |                |         |       |       |                  |         |       |         |                  |         |       |  |         |
|                                              | Δ               | t-value | p-val |      | Δ               | t-value | p-val |     | Δ              | t-value | p-val |     | Δ              | t-value | p-val |       | Δ                | t-value | p-val |         | Δ                | t-value | p-val |  |         |
| Pay                                          | 57              | 2.28    | 101   | 4.04 | 44              | 2.15**  | 0.04  | 64  | 2.56           | 277     | 11.08 | 213 | 6.44***        | 0.00    | 121   | 4.84  | 378              | 15.12   | 257   | 5.98*** | 0.00             |         |       |  |         |
| Performance share                            | 78              | 3.12    | 91    | 3.64 | 13              | 0.51    | 0.61  | 67  | 2.68           | 58      | 2.32  | -9  | 0.38           | 0.70    | 145   | 5.8   | 149              | 5.96    | 4     | 0.12    | 0.91             |         |       |  |         |
| Employee share                               | 17              | 0.68    | 14    | 0.56 | -3              |         |       | 5   | 0.2            | 3       | 0.12  | -2  |                |         | 22    | 0.88  | 17               | 0.68    | -5    | 0.40    | 0.69             |         |       |  |         |
| Part-time                                    | 0               | 0       | 0     | 0    | 0               | 0       | 0     | 0   | 0              | 0       | 0     | 0   | 0              | 0       | 0     | 0     | 0                | 0       | 0     | 0       | 0                |         |       |  |         |
| Full-time                                    | 0               | 0       | 5     | 0.2  | 5               |         |       | 0   | 0              | 0       | 0     | 0   | 0              | 0       | 0     | 0     | 5                | 0.2     | 5     |         |                  |         |       |  |         |
| Bonus                                        | 127             | 5.08    | 155   | 6.2  | 28              | 0.86    | 0.40  | 164 | 6.56           | 229     | 9.16  | 65  | 1.58           | 0.12    | 291   | 11.64 | 384              | 15.36   | 93    | 1.76*   | 0.08             |         |       |  |         |
| Pay gap                                      | 0               | 0       | 30    | 1.2  | 30              | 3.54*** | 0.00  | 0   | 0              | 38      | 1.52  | 38  | 2.42**         | 0.02    | 0     | 0     | 68               | 2.72    | 68    | 4.01*** | 0.00             |         |       |  |         |
| Total                                        | 856             |         | 1833  |      | 977             |         |       | 581 |                | 1426    |       | 845 |                |         | 1437  |       | 3259             |         | 18-   |         | 22               |         |       |  |         |

| Panel B WLHC data                                   | 2011: DEHC NARR |         |       |       | 2021: DEHC NARR |         |       |    | 2011: DEHC NUM |         |       |     | 2021: DEHC NUM |         |       |      | 2011: DEHC TOTAL |         |       |         | 2021: DEHC TOTAL |         |       |  | p-value |
|-----------------------------------------------------|-----------------|---------|-------|-------|-----------------|---------|-------|----|----------------|---------|-------|-----|----------------|---------|-------|------|------------------|---------|-------|---------|------------------|---------|-------|--|---------|
|                                                     | Total           |         | Mean  |       | Total           |         | Mean  |    | Total          |         | Mean  |     | Total          |         | Mean  |      | Total            |         | Mean  |         | Total            |         |       |  |         |
|                                                     |                 |         |       |       |                 |         |       |    |                |         |       |     |                |         |       |      |                  |         |       |         |                  |         |       |  |         |
|                                                     | Δ               | t-value | p-val |       | Δ               | t-value | p-val |    | Δ              | t-value | p-val |     | Δ              | t-value | p-val |      | Δ                | t-value | p-val |         | Δ                | t-value | p-val |  |         |
| Ethnic + Race                                       | 23              | 0.92    | 106   | 4.24  | 83              | 3.66*** | 0.00  | 5  | 0.2            | 40      | 1.6   | 35  | 2.25**         | 0.03    | 28    | 1.12 | 146              | 5.84    | 118   | 4.29*** | 0.00             |         |       |  |         |
| LGBTQ+ + Sexual Orientation                         | 11              | 0.44    | 64    | 2.56  | 53              | 4.08*** | 0.00  | 0  | 0              | 13      | 0.52  | 13  |                |         | 11    | 0.44 | 77               | 3.08    | 66    | 4.47*** | 0.00             |         |       |  |         |
| Disability/Disabilities                             | 25              | 1       | 65    | 2.6   | 40              | 3.14*** | 0.00  | 0  | 0              | 12      | 0.48  | 12  |                |         | 25    | 1    | 77               | 3.08    | 52    | 3.36*** | 0.00             |         |       |  |         |
| Gender                                              | 36              | 1.44    | 127   | 5.08  | 91              | 4.09*** | 0.00  | 18 | 0.72           | 162     | 6.48  | 144 | 5.07***        | 0.00    | 54    | 2.16 | 289              | 11.56   | 235   | 7.25*** | 0.00             |         |       |  |         |
| Religious/Religion                                  | 17              | 0.68    | 7     | 0.28  | -10             | -2.27   | -0.03 | 0  | 0              | 0       | 0     | 0   |                |         | 17    | 0.68 | 7                | 0.28    | -10   | 1.99*   | 0.05             |         |       |  |         |
| Age                                                 | 17              | 0.68    | 29    | 1.16  | 12              | 0.73    | 0.47  | 9  | 0.36           | 19      | 0.76  | 10  | 1.12           | 0.27    | 26    | 1.04 | 48               | 1.92    | 22    | 1.19    | 0.24             |         |       |  |         |
| Inclusion                                           | 102             | 4.08    | 441   | 17.64 | 339             | 5.37*** | 0.00  | 8  | 0.32           | 46      | 1.84  | 38  | 2.32**         | 0.02    | 110   | 4.4  | 487              | 19.48   | 377   | 4.60*** | 0.00             |         |       |  |         |
| Geographical + Location                             | 10              | 0.4     | 19    | 0.76  | 9               |         |       | 27 | 1.08           | 31      | 1.24  | 4   | 0.25           | 0.80    | 37    | 1.48 | 50               | 2       | 13    | 0.71    | 0.48             |         |       |  |         |
| Human + Employee + Worker + Civil + Labour rights   | 21              | 0.84    | 102   | 4.08  | 81              | 4.09*** | 0.00  | 1  | 0.04           | 4       | 0.16  | 3   |                |         | 22    | 0.88 | 106              | 4.24    | 84    | 3.61*** | 0.00             |         |       |  |         |
| Innovation                                          | 0               | 0       | 0     | 0     | 0               |         |       | 2  | 0.08           | 3       | 0.12  | 1   |                |         | 2     | 0.08 | 3                | 0.12    | 1     |         |                  |         |       |  |         |
| Maternity + Paternity + Pregnancy                   | 2               | 0.08    | 12    | 0.48  | 10              | 1.53    | 0.13  | 0  | 0              | 5       | 0.2   | 5   |                |         | 2     | 0.08 | 17               | 0.68    | 15    |         |                  |         |       |  |         |
| Satisfaction                                        | 6               | 0.24    | 10    | 0.4   | 4               |         |       | 3  | 0.12           | 4       | 0.16  | 1   |                |         | 9     | 0.36 | 14               | 0.56    | 5     |         |                  |         |       |  |         |
| Education + Training                                | 100             | 4       | 280   | 11.2  | 180             | 3.72*** | 0.00  | 16 | 0.64           | 53      | 2.12  | 37  | 1.74*          | 0.09    | 116   | 4.64 | 333              | 13.32   | 217   | 3.61*** | 0.00             |         |       |  |         |
| Turnover + Retainment                               | 2               | 0.08    | 5     | 0.2   | 3               |         |       | 3  | 0.12           | 26      | 1.04  | 23  |                |         | 5     | 0.2  | 31               | 1.24    | 26    | 2.46**  | 0.02             |         |       |  |         |
| Absenteeism                                         | 0               | 0       | 5     | 0.2   | 5               |         |       | 0  | 0              | 0       | 0     | 0   |                |         | 0     | 0    | 5                | 0.2     | 5     |         |                  |         |       |  |         |
| Creativity                                          | 3               | 0.12    | 4     | 0.16  | 1               |         |       | 0  | 0              | 0       | 0     | 0   |                |         | 3     | 0.12 | 4                | 0.16    | 1     |         |                  |         |       |  |         |
| Illness + Healthcare + Safety + Health + Fatalities | 181             | 7.24    | 355   | 14.2  | 174             | 2.18**  | 0.03  | 30 | 1.2            | 70      | 2.8   | 40  | 1.96*          | 0.06    | 211   | 8.44 | 425              | 17      | 214   | 2.32**  | 0.02             |         |       |  |         |
| Number of employees                                 | 1               | 0.04    | 0     | 0     | -1              |         |       | 42 | 1.68           | 85      | 3.4   | 43  | 2.59**         | 0.01    | 43    | 1.72 | 85               | 3.4     | 42    | 2.00*   | 0.05             |         |       |  |         |
| Pension + Retirement                                | 26              | 1.04    | 60    | 2.4   | 34              | 2.81**  | 0.01  | 3  | 0.12           | 22      | 0.88  | 19  |                |         | 29    | 1.16 | 82               | 3.28    | 53    | 3.27*** | 0.00             |         |       |  |         |
| Mental health                                       | 0               | 0       | 62    | 2.48  | 62              | 3.54*** | 0.00  | 0  | 0              | 4       | 0.16  | 4   |                |         | 0     | 0    | 66               | 2.64    | 66    |         |                  |         |       |  |         |

(Continues)

TABLE 7 | (Continued)

| Panel B WLHC data                   | 2011: DEHC NARR |      |      | 2021: DEHC NARR |      |         | 2011: DEHC NUM |      |       | 2021: DEHC NUM |      |      | 2011: DEHC TOTAL |        |         | 2021: DEHC TOTAL |      |      | p-value |         |      |
|-------------------------------------|-----------------|------|------|-----------------|------|---------|----------------|------|-------|----------------|------|------|------------------|--------|---------|------------------|------|------|---------|---------|------|
|                                     | DEHC NARR       |      | Δ    | DEHC NARR       |      | Δ       | DEHC NUM       |      | p-val | DEHC NUM       |      | Δ    | DEHC TOTAL       |        | p-value | DEHC TOTAL       |      | Δ    |         |         |      |
|                                     | Total           | Mean |      | Total           | Mean |         | Total          | Mean |       | Total          | Mean |      | Total            | Mean   |         | Total            | Mean |      |         | Total   | Mean |
|                                     | Total           | Mean | Δ    | Total           | Mean | Δ       | Total          | Mean | p-val | Total          | Mean | Δ    | Total            | Mean   | p-value | Total            | Mean | Δ    |         |         |      |
| Contract benefit                    | 0               | 0    | 0    | 0               | 0    | 0       | 0              |      | 0     | 0              | 0    | 0    | 0                |        | 0       | 0                | 0    |      |         |         |      |
| Performance                         | 37              | 1.48 | 36   | 1.44            | -1   | 0.08    | 0.94           | 0.94 | 1     | 0.04           | 0    | 0    | -1               |        | 38      | 1.52             | 36   | 1.44 | -2      | 0.14    | 0.89 |
| Recruitment                         | 23              | 0.92 | 45   | 1.8             | 22   | 1.69*   | 0.10           |      | 0     | 0              | 2    | 0.08 | 2                |        | 23      | 0.92             | 47   | 1.88 | 24      | 1.65    | 0.11 |
| Entrepreneurship                    | 0               | 0    | 0    | 0               | 0    |         |                |      | 0     | 0              | 0    | 0    | 0                |        | 0       | 0                | 0    | 0    | 0       |         |      |
| Intrapreneurship                    | 0               | 0    | 0    | 0               | 0    |         |                |      | 0     | 0              | 0    | 0    | 0                |        | 0       | 0                | 0    | 0    | 0       |         |      |
| Misconduct + Discipline + Grievance | 5               | 0.2  | 7    | 0.28            | 2    | 0.54    | 0.59           |      | 0     | 0              | 0    | 0    | 0                |        | 5       | 0.2              | 7    | 0.28 | 2       |         |      |
| Apprenticeship                      | 20              | 0.8  | 27   | 1.08            | 7    | 0.68    | 0.50           |      | 7     | 0.28           | 22   | 0.88 | 15               | 2.07** | 27      | 1.08             | 49   | 1.96 | 22      | 1.76*   | 0.08 |
| Talent                              | 34              | 1.36 | 110  | 4.4             | 76   | 3.68*** | 0.00           |      | 1     | 0.04           | 2    | 0.08 | 1                |        | 35      | 1.4              | 112  | 4.48 | 77      | 3.06*** | 0.00 |
| Welfare + Well-being + Engagement   | 31              | 1.24 | 117  | 4.68            | 86   | 3.56*** | 0.00           |      | 15    | 0.6            | 53   | 2.12 | 38               | 2.60** | 46      | 1.84             | 170  | 6.8  | 124     | 4.43*** | 0.00 |
| School fees                         | 0               | 0    | 0    | 0               | 0    |         |                |      | 0     | 0              | 0    | 0    | 0                |        | 0       | 0                | 0    | 0    | 0       |         |      |
| Loyalty                             | 3               | 0.12 | 3    | 0.12            | 0    |         |                |      | 0     | 0              | 0    | 0    | 0                |        | 3       | 0.12             | 3    | 0.12 | 0       |         |      |
| CEO pay ratio                       | 0               | 0    | 0    | 0               | 0    |         |                |      | 0     | 0              | 0    | 0    | 0                |        | 0       | 0                | 0    | 0    | 0       |         |      |
| Pay                                 | 20              | 0.8  | 91   | 3.64            | 71   | 3.14**  | 0.00           |      | 9     | 0.36           | 24   | 0.96 | 15               | 1.63   | 29      | 1.16             | 115  | 4.6  | 86      | 3.44*** | 0.00 |
| Performance                         | 0               | 0    | 7    | 0.28            | 7    |         |                |      | 0     | 0              | 0    | 0    | 0                |        | 0       | 0                | 7    | 0.28 | 7       |         |      |
| Employee share                      | 81              | 3.24 | 87   | 3.48            | 6    | 0.26    | 0.80           |      | 47    | 1.88           | 27   | 1.08 | -20              | 1.30   | 128     | 5.12             | 114  | 4.56 | -14     | 0.48    | 0.63 |
| Part-time                           | 0               | 0    | 6    | 0.24            | 6    |         |                |      | 2     | 0.08           | 11   | 0.44 | 9                |        | 2       | 0.08             | 17   | 0.68 | 15      |         |      |
| Full-time                           | 2               | 0.08 | 8    | 0.32            | 6    |         |                |      | 12    | 0.48           | 25   | 1    | 13               | 0.99   | 14      | 0.56             | 33   | 1.32 | 19      | 1.39    | 0.17 |
| Bonus                               | 4               | 0.16 | 5    | 0.2             | 1    |         |                |      | 1     | 0.04           | 1    | 0.04 | 0                |        | 5       | 0.2              | 6    | 0.24 | 1       |         |      |
| Pay gap                             | 0               | 0    | 36   | 1.44            |      |         |                |      | 0     | 0              | 19   | 0.76 | 19               |        | 0       | 0                | 55   | 2.20 | 55      |         |      |
| Total                               | 843             |      | 2338 |                 | 1495 |         | 262            |      | 785   |                | 523  |      | 1105             |        | 3123    |                  | 2018 |      |         |         |      |

Note: \*, \*\*, \*\*\* indicate significance level at 10%, 5%, 1% respectively. Δ refers to absolute difference.

TABLE 8 | WLHC/DEHC ratio analysis.

| Human capital variables                             | WLHC data |     |       |      |     |       |         |         |         |      | DEHC data |      |       |         |         |         |            |      |        |       |         |         |
|-----------------------------------------------------|-----------|-----|-------|------|-----|-------|---------|---------|---------|------|-----------|------|-------|---------|---------|---------|------------|------|--------|-------|---------|---------|
|                                                     | 2011      |     |       |      |     | 2021  |         |         |         |      | p-value   | 2011 |       |         |         |         | Diff Ratio | 2021 |        |       |         |         |
|                                                     | NARR      | NUM | Ratio | NARR | NUM | Ratio | Ratio Δ | t-value | p-value | NARR |           | NUM  | Ratio | Ratio Δ | t-value | p-value |            | NARR | NUM    | Ratio | Ratio Δ | t-value |
| Ethnic + Race                                       | 23        | 5   | 5     | 106  | 40  | 3     | 2       | 2.31*** | 0.02    |      | 2         | 1    | 2     |         | 95      | 47      | 2          | 0    | 0.35   | 0.53  |         |         |
| LGBTQ+ + Sexual Orientation                         | 11        | 0   |       | 64   | 13  | 5     |         |         |         |      | 0         | 0    |       |         | 13      | 2       | 7          | -7   |        |       |         |         |
| Disability/Disabilities                             | 25        | 0   |       | 65   | 12  | 5     |         |         |         |      | 5         | 0    |       |         | 18      | 1       | 18         | -18  |        |       |         |         |
| Gender                                              | 36        | 18  | 2     | 127  | 162 | 1     | 1       | 3.55*** | 0.00    |      | 36        | 25   | 1     |         | 157     | 169     | 1          | 1    | 0.53   | 0.46  |         |         |
| Religious/Religion                                  | 17        | 0   |       | 7    | 0   |       |         |         |         |      | 2         | 0    |       |         | 2       | 0       |            |      |        |       |         |         |
| Age                                                 | 17        | 9   | 2     | 29   | 19  | 2     | 0       | 1.05    | 0.30    |      | 5         | 98   | 0     |         | 22      | 82      | 0          | 0    |        |       |         |         |
| Inclusion                                           | 102       | 8   | 13    | 441  | 46  | 10    | 3       | 2.01*   | 0.05    |      | 78        | 2    | 39    |         | 359     | 21      | 17         | 22   | 2.89** | 0.01  |         |         |
| Geographical + Location                             | 10        | 27  | 0     | 19   | 31  | 1     | 0       | 0.97    | 0.34    |      | 9         | 1    | 9     |         | 18      | 17      | 1          | 8    | 0.52   | 0.60  |         |         |
| Human + Employee + Worker + civil + Labour Rights   | 21        | 1   | 21    | 102  | 4   | 26    | -5      | -1.39   | 0.17    |      | 2         | 0    |       |         | 1       | 0       |            |      |        |       |         |         |
| Innovation                                          | 0         | 2   |       | 0    | 3   | 0     |         |         |         |      | 0         | 0    |       |         | 0       | 0       |            |      |        |       |         |         |
| Maternity + Paternity + Pregnancy                   | 2         | 0   |       | 12   | 5   | 2     |         |         |         |      | 0         | 0    |       |         | 2       | 0       |            |      |        |       |         |         |
| Satisfaction                                        | 6         | 3   | 2     | 10   | 4   | 3     | -1      | -0.13   | 0.90    |      | 2         | 0    |       |         | 1       | 0       |            |      |        |       |         |         |
| Education + Training                                | 100       | 16  | 6     | 280  | 53  | 5     | 1       | 2.27*** | 0.03    |      | 40        | 2    | 20    |         | 109     | 6       | 18         | 2    | 1.05   | 0.30  |         |         |
| Turnover + Retainment                               | 2         | 3   | 1     | 5    | 26  | 0     | 0       | 1.66    | 0.11    |      | 0         | 0    |       |         | 0       | 0       |            |      |        |       |         |         |
| Absenteeism                                         | 0         | 0   |       | 5    | 0   |       |         |         |         |      | 0         | 0    |       |         | 0       | 0       |            |      |        |       |         |         |
| Creativity                                          | 3         | 0   |       | 4    | 0   |       |         |         |         |      | 1         | 0    |       |         | 1       | 0       |            |      |        |       |         |         |
| Illness + Healthcare + Safety + Health + Fatalities | 181       | 30  | 6     | 355  | 70  | 5     | 1       | 0.76    | 0.45    |      | 40        | 5    | 8     |         | 103     | 4       | 26         | -18  | -0.72  | 0.47  |         |         |
| Number of employees                                 | 1         | 42  | 0     | 0    | 85  | 0     | 0       | 0.99    | 0.33    |      | 6         | 1    | 6     |         | 0       | 17      | 0          | 6    |        |       |         |         |
| Pension + Retirement                                | 26        | 3   | 9     | 60   | 22  | 3     | 6       | 0.47    | 0.64    |      | 127       | 114  | 1     |         | 201     | 158     | 1          | 0    | 0.33   | 0.74  |         |         |
| Mental health                                       | 0         | 0   |       | 62   | 4   | 16    |         |         |         |      | 0         | 0    |       |         | 8       | 0       |            |      |        |       |         |         |
| Discount                                            | 0         | 0   |       | 0    | 0   |       |         |         |         |      | 0         | 0    |       |         | 0       | 0       |            |      |        |       |         |         |
| Performance                                         | 37        | 1   | 37    | 36   | 0   |       |         |         |         |      | 175       | 31   | 6     |         | 180     | 98      | 2          | 4    | 1.33   | 0.19  |         |         |
| Recruitment                                         | 23        | 0   |       | 45   | 2   | 23    |         |         |         |      | 17        | 0    |       |         | 29      | 1       | 29         | -29  | -0.99  | 0.33  |         |         |
| Entrepreneurship                                    | 0         | 0   |       | 0    | 0   |       |         |         |         |      | 0         | 0    |       |         | 1       | 0       |            |      |        |       |         |         |
| Intrapreneurship                                    | 0         | 0   |       | 0    | 0   |       |         |         |         |      | 0         | 0    |       |         | 0       | 0       |            |      |        |       |         |         |

(Continues)

TABLE 8 | (Continued)

| Human capital variables             | WLHC data |     |       |      |     |      |     |       |         |         | DEHC data |      |     |       |      |      |      |       |         |         |         |      |
|-------------------------------------|-----------|-----|-------|------|-----|------|-----|-------|---------|---------|-----------|------|-----|-------|------|------|------|-------|---------|---------|---------|------|
|                                     | 2011      |     |       |      |     | 2021 |     |       |         |         | 2011      |      |     |       |      | 2021 |      |       |         |         |         |      |
|                                     | NARR      | NUM | Ratio | NARR | NUM | NARR | NUM | Ratio | Ratio Δ | t-value | p-value   | NARR | NUM | Ratio | Diff | NARR | NUM  | Ratio | Ratio Δ | t-value | p-value |      |
|                                     |           |     |       |      |     |      |     |       |         |         |           |      |     |       |      |      |      |       |         |         |         |      |
| Misconduct + Discipline + Grievance | 5         | 0   |       | 7    | 0   |      |     |       |         |         |           | 0    | 0   |       |      |      | 1    | 0     |         |         |         |      |
| Apprenticeship                      | 20        | 7   | 3     | 27   | 22  | 1    | 2   | 0.99  |         | 0.34    |           | 4    | 0   |       |      |      | 8    | 1     | 8       | -8      | 0.99    | 0.33 |
| Talent                              | 34        | 1   | 34    | 110  | 2   | 55   | -21 | -1.08 |         | 0.29    |           | 17   | 0   |       |      |      | 67   | 0     | 0       | 0       |         |      |
| Welfare + Well-being + Engagement   | 31        | 15  | 2     | 117  | 53  | 2    | 0   | 1.76* |         | 0.08    |           | 7    | 0   |       |      |      | 20   | 1     | 20      | -20     |         |      |
| School fees                         | 0         | 0   |       | 0    | 0   |      |     |       |         |         |           | 2    | 1   | 2     |      |      | 1    | 0     |         |         |         |      |
| Loyalty                             | 3         | 0   |       | 3    | 0   |      |     |       |         |         |           | 0    | 0   |       |      |      | 1    | 0     |         |         |         |      |
| CEO pay ratio                       | 0         | 0   |       | 0    | 0   |      |     |       |         |         |           | 0    | 0   |       |      |      | 19   | 196   |         |         |         |      |
| Pay                                 | 20        | 9   | 2     | 91   | 24  | 4    | -2  | 2.04* |         | 0.05    |           | 57   | 64  | 1     |      |      | 101  | 277   | 0       | -1      | -1.23   | 0.22 |
| Performance                         | 0         | 0   |       | 7    | 0   |      |     |       |         |         |           | 78   | 67  | 1     |      |      | 91   | 58    | 2       | 0       | 1.54    | 0.13 |
| Employee share                      | 81        | 47  | 2     | 87   | 27  | 3    | -1  | -0.69 |         | 0.49    |           | 17   | 5   | 3     |      |      | 14   | 3     | 5       | 1       | 0.45    | 0.66 |
| Part-time                           | 0         | 2   | 0     | 6    | 11  | 1    |     |       |         |         |           | 0    | 0   |       |      |      | 0    | 0     |         |         |         |      |
| Full-time                           | 2         | 12  | 0     | 8    | 25  | 0    | 0   | 1.63  |         | 0.11    |           | 0    | 0   |       |      |      | 5    | 0     |         |         |         |      |
| Bonus                               | 4         | 1   | 4     | 5    | 1   | 5    |     |       |         |         |           | 127  | 164 | 1     |      |      | 155  | 229   | 1       | 0       | 0.27    | 0.79 |
| Pay gap                             | 0         | 0   |       | 36   | 19  | 2    |     |       |         |         |           | 0    | 0   |       |      |      | 30   | 38    | 1       | 1       | 2.11**  | 0.04 |
|                                     | 843       | 262 |       | 2338 | 785 |      |     |       |         |         |           | 856  | 581 |       |      |      | 1833 | 1426  |         |         |         |      |

Note: \*, \*\*, \*\*\* indicate significance level at 10%, 5%, 1%, respectively.  $\Delta$  refers to absolute difference.

**TABLE 9** | classification of HC variables disclosed on a NUM basis by all firms (25 occurrences).

|    | WLHC NUM variables disclosed for all firms          | DEHC NUM variables disclosed for all firms | WLHC NUM variables NOT disclosed for all firms    | DEHC NUM variables NOT disclosed for all firms      |
|----|-----------------------------------------------------|--------------------------------------------|---------------------------------------------------|-----------------------------------------------------|
| 1  | Ethnic + Race                                       | Ethnic + Race                              | LGBTQ+ + Sexual Orientation                       | LGBTQ+ + Sexual Orientation                         |
| 2  | Gender                                              | Gender                                     | Disability/Disabilities                           | Disability/Disabilities                             |
| 3  | Inclusion                                           | Age                                        | Religious/Religion                                | Religious/Religion                                  |
| 4  | Geographical + Location                             | Pension + Retirement                       | Human + Employee + Worker + Civil + Labour Rights | Human + Employee + Worker + Civil + Labour Rights   |
| 5  | Education + Training                                | Performance                                | Innovation                                        | Innovation                                          |
| 6  | Turnover + Retainment                               | CEO pay                                    | Maternity + Paternity + Pregnancy                 | Maternity + Paternity + Pregnancy                   |
| 7  | Illness + Healthcare + Safety + Health + Fatalities | Pay                                        | Satisfaction                                      | Satisfaction                                        |
| 8  | Number of employees                                 | Performance share                          | Absenteeism                                       | Absenteeism                                         |
| 9  | Welfare + Well-being + Engagement                   | Bonus                                      | Creativity                                        | Creativity                                          |
| 10 | Employee share                                      | Pay gap                                    | Mental health                                     | Mental health                                       |
| 11 | Full-time                                           |                                            | Recruitment                                       | Recruitment                                         |
| 12 |                                                     |                                            | Entrepreneurship                                  | Entrepreneurship                                    |
| 13 |                                                     |                                            | Intrapreneurship                                  | Intrapreneurship                                    |
| 14 |                                                     |                                            | Misconduct + Discipline + Grievance               | Misconduct + Discipline + Grievance                 |
| 15 |                                                     |                                            | Apprenticeship                                    | Apprenticeship                                      |
| 16 |                                                     |                                            | Talent                                            | Talent                                              |
| 17 |                                                     |                                            | School fees                                       | School fees                                         |
| 18 |                                                     |                                            | Loyalty                                           | Loyalty                                             |
| 19 |                                                     |                                            | Part-time                                         | Part-time                                           |
| 20 |                                                     |                                            | CEO pay ratio                                     | Welfare + Well-being + Engagement                   |
| 21 |                                                     |                                            | Pay                                               | Full-time                                           |
| 22 |                                                     |                                            | Performance                                       | Employee share                                      |
| 23 |                                                     |                                            | Bonus                                             | Geographical + Location                             |
| 24 |                                                     |                                            | Pay gap                                           | Education + Training                                |
| 25 |                                                     |                                            | Pension + Retirement                              | Turnover + Retainment                               |
| 26 |                                                     |                                            | Contract benefit                                  | Illness + Healthcare + Safety + Health + Fatalities |
| 27 |                                                     |                                            | Performance                                       | Number of employees                                 |
| 28 |                                                     |                                            | Age                                               | Contract benefit                                    |
| 29 |                                                     |                                            |                                                   | Inclusion                                           |

while an algorithm approach has advantages, it is no substitute to reading the annual report.

Six disclosures increase at a statistically significant basis over the sample period; (i) Ethnic + Race, (ii) LGBTQ(+) + Sexual Orientation, (iii) Gender, (iv) Inclusion, (v) CEO Pay and (vi) Pay. Using a parsimonious approach, (v) CEO Pay and (vi) Pay are combined for interpretation purposes, as they both relate to employee compensation. The term IEGD is coined for those disclosures associated with (i) Ethnic + Race, (ii) LGBTQ (+) + Sexual Orientation, (iii) Gender, (iv) Inclusion. The term is coined, because the disclosures listed (i–iv) share similar traits, in the sense they are the sustainability/diversity disclosures that increase significantly. However, IEGD is not designed to reflect EDI/diversity practice. More specifically, disability should be considered as a diversity characteristic under the Equality Act. To provide a more nuanced interpretation relating to disability disclosures (among other characteristics), we allocate an independent grouping for disability. Hence, disability is excluded from the IEGD reference group. Therefore, a limitation of this study is that IEGD only refers to some EDI/diversity disclosures. Thus, IEGD should not be mistaken for EDI.

While the annual report is considered the most important document for information users (Dumay 2014), firms disclose HC information using many different channels (CSR report, integrated reports and media/websites). Future studies can extend the literature by identifying whether the results of this study are equal/different using other financial documents. In this study, we interpret that the availability of NUM data enhances comparability. However, we acknowledge that for some NUM values, NUM information may represent a compromise, rather than a precise method for comparison. For example, if qualifications are attained in different countries, quantification does not necessarily lead to better comparisons. Finally, this study surmises that IEGD HC reporting quality is a legitimacy strategy by firms. Future studies may investigate how different groups such as management, employees, analysts and legislators perceive the importance of disclosing high-quality IEGD information.

### Author Contributions

Conception and design of study: Dafydd Mali. Acquisition of data: Dafydd Mali. Analysis and/or interpretation of data: Dafydd Mali. Drafting the manuscript: Dafydd Mali. Approval of the version of the manuscript to be published: Dafydd Mali, Rexford Attah-Boakye, Kwaku Adams, Richard Fairchild and Adil EL Falkir.

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### Ethics Statement

The authors have nothing to report.

### Conflicts of Interest

The authors declare no conflicts of interest.

### Data Availability Statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions. Data will be deposited in the University of Nottingham repository upon publication.

### Endnotes

<sup>1</sup> Intellectual capital is the result of mental processes that form a set of intangible objects that can be used in economic activity and bring income to its owner which contributes towards value creation (Bontis 1998; Dumay 2014; Lev and Zambon 2003; Meritum 2002). Intellectual capital consists of three forms of capital: (i) Internal Capital, (ii) External Capital and (iii) Human Capital. Numerous studies investigate intellectual capital using all three intellectual capital subsets (Guthrie et al. 2004; Guthrie et al. 2006; Striukova et al. 2008; Vandemaele et al. 2005). However, of the three forms of intellectual capital, HC is considered by many to be a firm's most valuable asset (McCracken et al. 2018). Thus, this study only provides empirical results for human capital, similar to Abeysekera and Guthrie (2004).

<sup>2</sup> Equality Act 2010: UK Corporate Governance Code (2018, 2024), FCO (2022), NFRD Directive 2014/95/EU.

<sup>3</sup> The purpose of this study is to distinguish between the HC reporting practices of IEGD disclosures and other important/traditional disclosures. IEGD refers to disclosures that are promoted with the introduction of the above policies (footnote 1), that is, (i) Ethnic + Race, (ii) LGBTQ(+) + Sexual Orientation, (iii) Gender and (iv) Inclusion. We explain limitations associated with the coined term 'IEGD' in the conclusion section.

<sup>4</sup> In this study, we refer to other important/traditional HC disclosures as those that pertain to the knowledge, ability and skills of a firm's workforce. These HC disclosures are well-established in previous studies (see Absar et al. 2014; Duff 2018; Guthrie et al. 2006; McCracken et al. 2018; Lim and Mali 2022).

<sup>5</sup> (See Lim and Mali 2022; McCracken et al. 2018; Omens et al. 2021; Scraggs 2013).

<sup>6</sup> Religiosity disclosures may decrease, because of lower levels of religiosity in the United Kingdom (Savage 2021).

<sup>7</sup> The result of mental processes that form a set of intangible objects that can be used in economic activity and bring income to its owner.

<sup>8</sup> an identifiable nonmonetary asset without physical substance.

<sup>9</sup> However, the reality of the physical assets that firms have is different and varies considerably across firms.

<sup>10</sup> For example, with the availability of comparable HC data at the firm-year level (employee tenure, contract type/quality, benefits, training, among others), firm A's HC strategy is comparable over time. Moreover, the performance of firms A and B is comparable.

<sup>11</sup> Pension + Retirement, Performance, CEO Pay, Pay, Performance Share, Bonus and Pay Gap.

<sup>12</sup> Geographical + Location, Number of Employees, Full-time

<sup>13</sup> Education + Training, Turnover + Retainment, Illness + Healthcare + Safety + Health + Fatalities, Welfare + Well-being + Engagement, Employee share.

<sup>14</sup> European Union (CSRD), Financial Conduct Authority (SRD) and the International Financial Reporting Standards (ISSB).

<sup>15</sup> DTI 2001, UK Companies Act 2006, CIPD, 2017.

<sup>16</sup>For example: Apprenticeship/internship/mentorship, Performance, Benefits, Recruitment, Contract/staff/remuneration information, Relations/communication, Disciplinary statistics, Retainment/tenure/loyalty, Diversity/equality, Satisfaction, Engagement, Talent management/career development, Ethics/human rights, Training/education, Entrepreneurship, Turnover, paternity/maternity, Welfare/wellness, Labour rights, Health and safety.

<sup>17</sup>Currently, in the United Kingdom, the government use questionnaire data from the Office of National Statistics (ONS) to determine the effect of government legislation, tariffs and grants on national productivity. However, we envision that with the use of questionnaire data, the effect of government legislation, tariffs and grants on national productivity is lost in an aggregate, because it is not possible to distinguish between the actions of firm X and Y, using ONS data.

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## Appendix 1

### Keyword list

Ability, Absent, Add, Age, Apprentic, Background, benefit Bonus, Capital, career, CEO, Civil, Colleague, Conduct, Contract, Contribut, Corporate, Communi, Creativity, Director, Disabil, Discipline, Discount, Diversity, EDI, Education, Employee, Employment, Engagement, Entrepreneur, Equality, Ethnic, Executive, Fatalit, Fees, Female, Full, Gap, Gender, Geograp, Governance, Graduate, Grievance, Grow, Health(care), Human, Illness, Inclus, Initiative, Innovation, Intellectual, Injuries, Intrapreneurship, Job, Labour, Labour, Law, Leadership, Lesbian, Gay, Bisexual, Trans(sexual), Location, Loyalty, Male, Maternity, Mental, Misconduct, Number, Orientation, Part, Paternity, Pay, People, Pension, Performance, Permanent, Policy, Promot, Profram, Race, Ratio, Recruitment, Religi, Retainment, Retirement, Rights, Safety, Satisfaction, School, Sex, Sick(ness), Support, Talent, Team, Tenure, Threat, Time, Training, Turnover, Type, Value, Volunteer, Welfare, Well-being, Worker.