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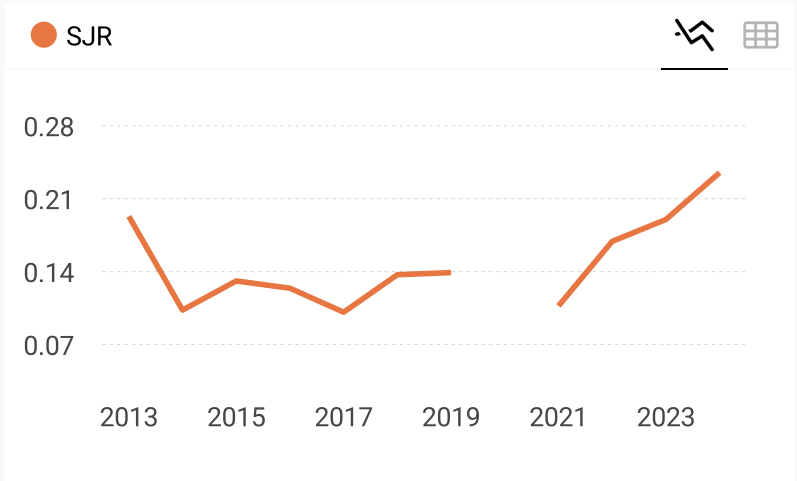
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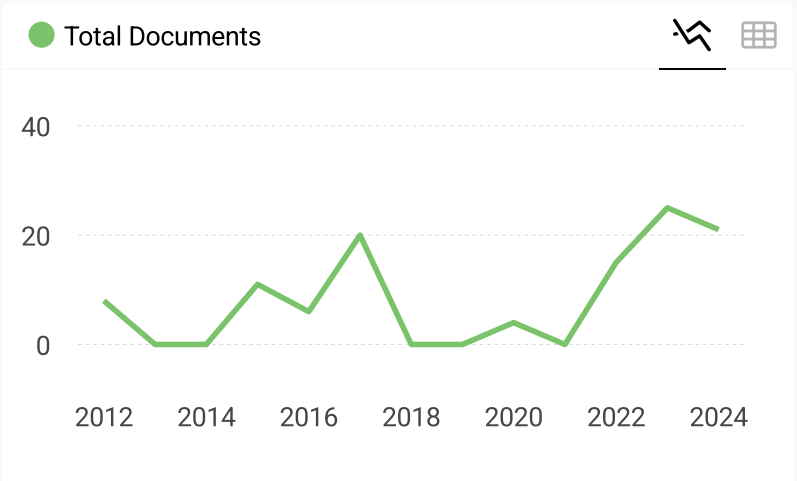
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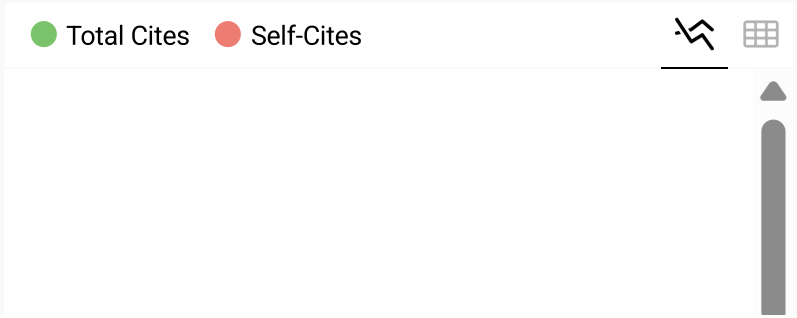
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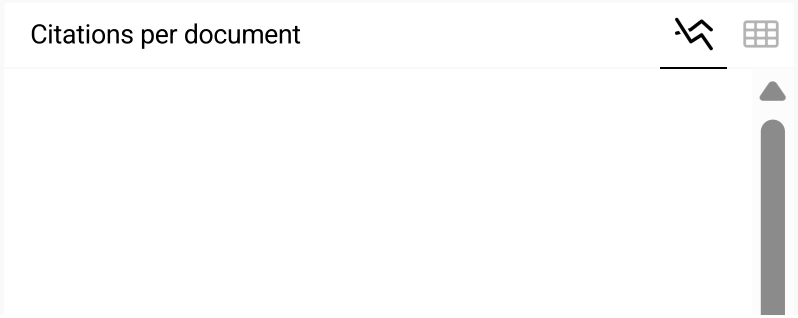
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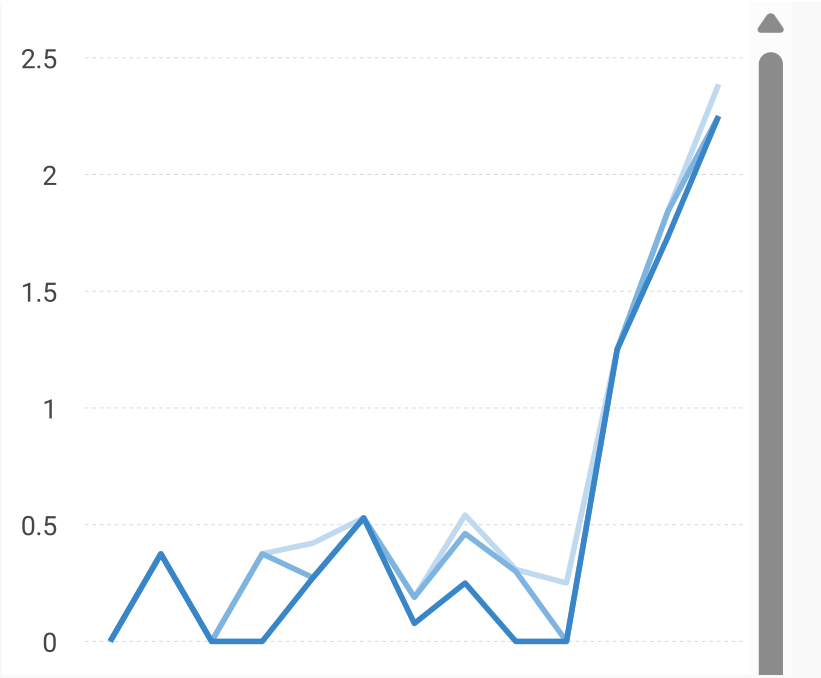
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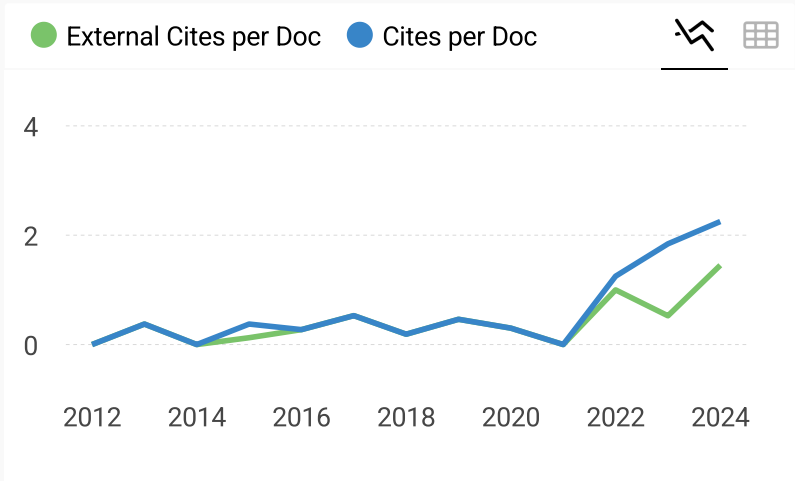
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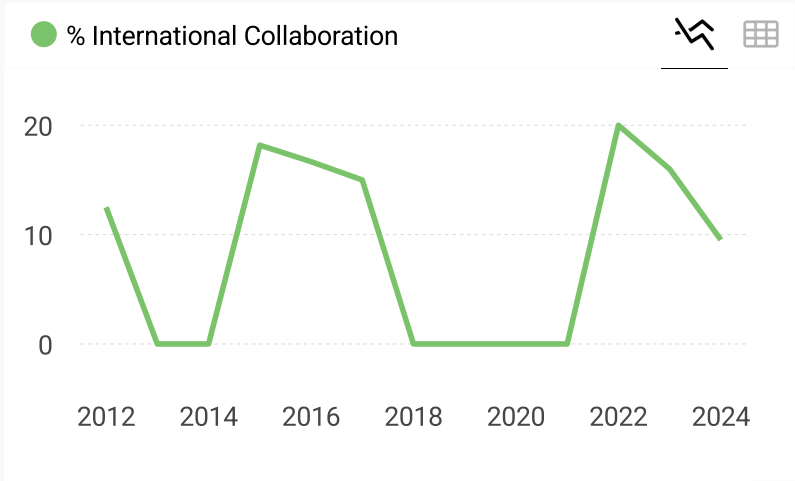
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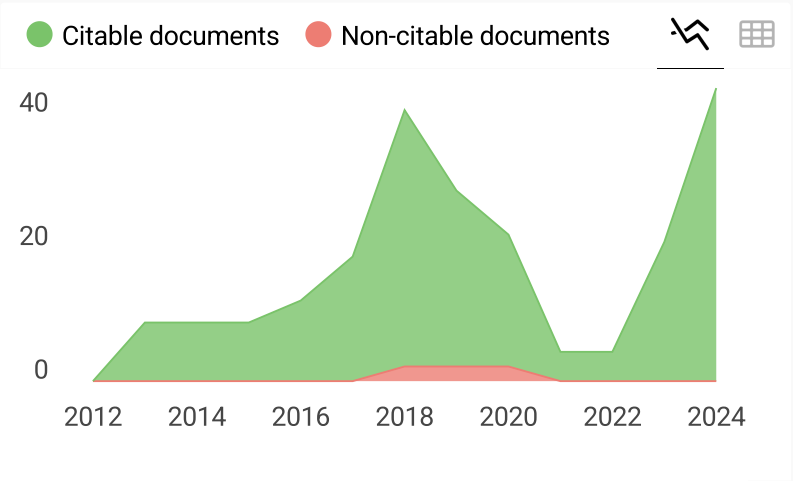
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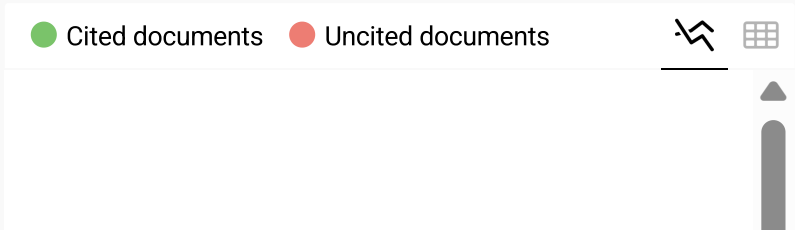
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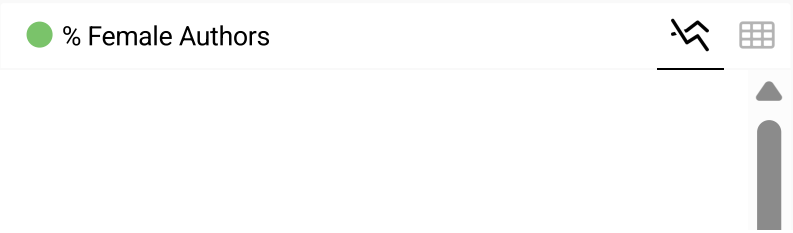
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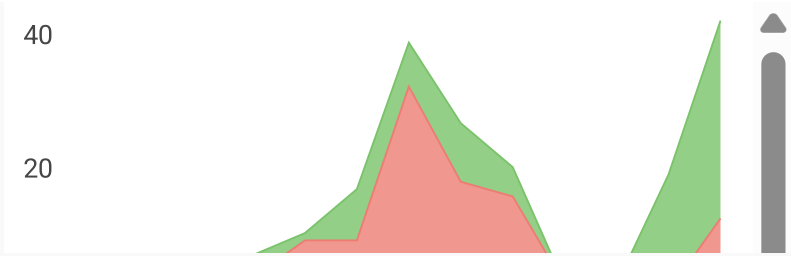

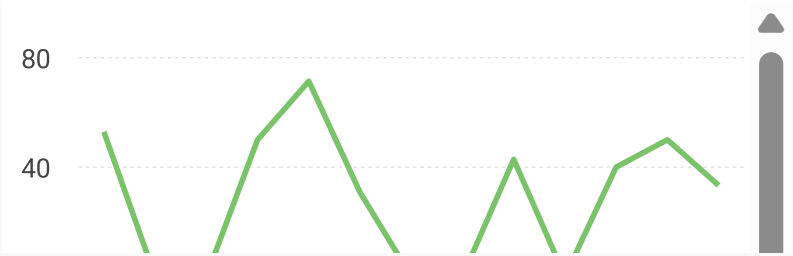

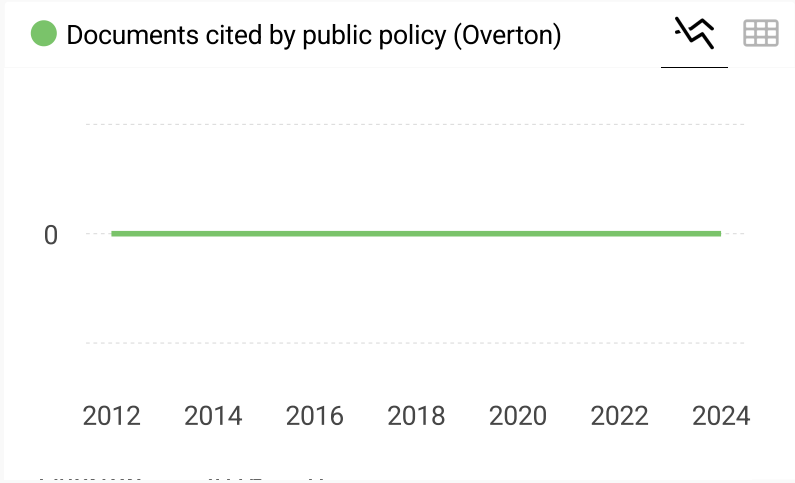

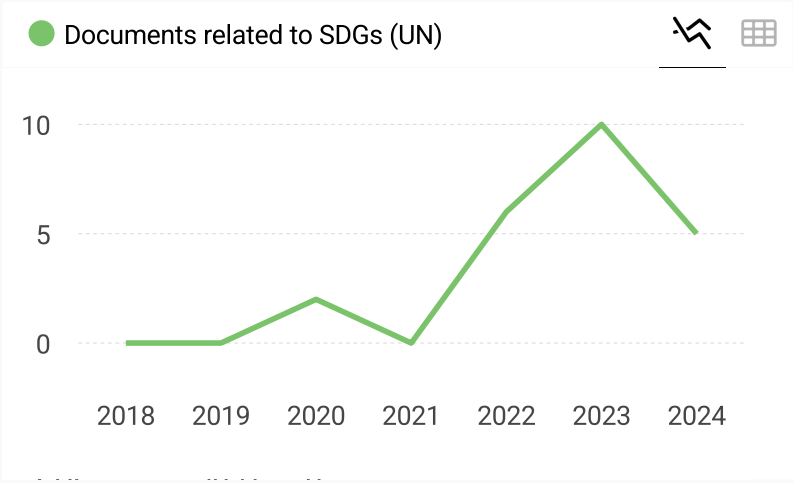

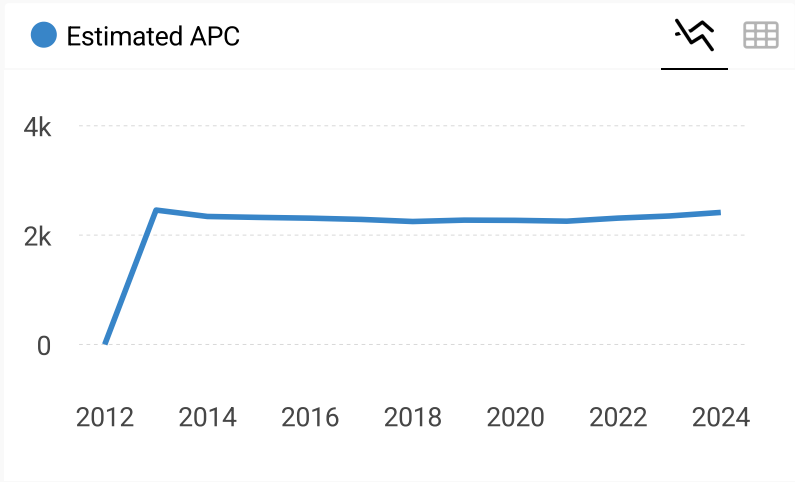

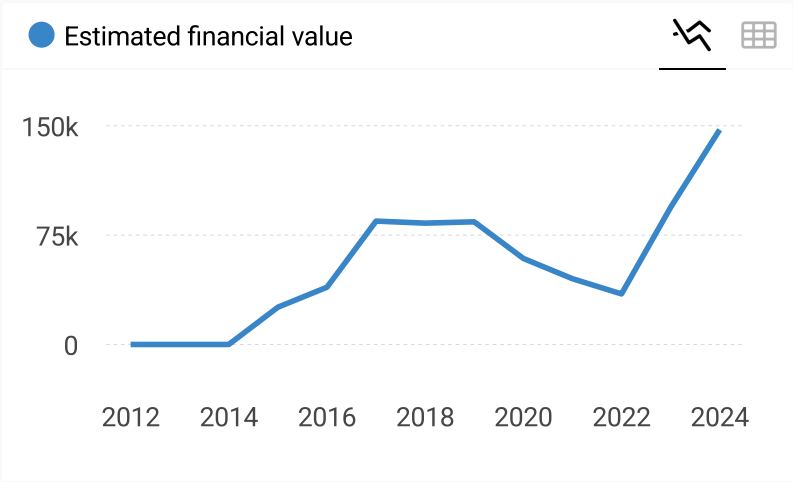

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Amidst COVID-19: the moderating role of innovation and brand valuation in ESG disclosure and firm value relationship

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Abstract: This paper mainly aims to explain the correlation of ESGD, innovation, and brand valuation toward firm value. In addition, this paper also observes the significant changes in ESGD before and during the COVID-19 pandemic. The study found that innovation positively strengthens the relationship between ESGD and firm value, while brand valuation does not. ESGD has had significant changes before and during the COVID-19 pandemic. The findings suggest ESGD, innovation, and brand valuation act as a competitive advantage and enhance additional value towards the firm value. The link between ESGD and firm value has been extensively studied. There is still a sizable study gap when considering potential mediating elements that can offer a more thorough and fuller picture of the ESGD and firm value link. Innovation and brand valuation are two of the most significant potential mediators.

Keywords: ESG disclosure; ESGD; innovation; brand valuation; firm value; COVID-19.

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1 Introduction

The year 2020 marked the beginning of the COVID-19 outbreak, which led to a significant strike on Indonesia's economy and worldwide. As the global catastrophe of the era, approximately around 200 countries in the world have suffered due to the pandemic (Sun et al., 2020). The pandemic created overwhelming outcomes on the world economy, eventually resulting in the contraction of 3.3% of global output in the first quarter of 2020 (Barrett et al., 2021). The vulnerable companies exposed to disruptions from the global pandemic have experienced disastrous financial and business performance due to travel restrictions and lockdowns (Donthu and Gustafsson, 2020). In Indonesia, the pandemic has severely harmed the country's economy as poverty, unemployment, and subpar businesses began to increase. Thereafter, the outbreak has given awareness that many clustered groups need to be assisted by others to survive the global pandemic.

The government has put into place a policy to halt the blowout of COVID-19 transmission as an effort to control the pandemic in Indonesia. The most well-known public policy is the Large-Scale Social Restriction Policy, imposed through Government Regulation No. 21. Unfortunately, the Indonesian government has failed to deliver transparency in handling the responsive actions of the COVID-19 public policy due to the conflict of interest between the policymakers and the public interest. Ambiguous policies worsened the actions, as many uncoordinated institutions must implement conflicting policies (Ayuningtyas et al., 2021). The abovementioned verifies that the government cannot handle and appropriately provide collective awareness of the COVID-19 pandemic for the public. Therefore, Indonesian companies are encouraged to assist the government in helping the aid for providing general support to society over corporate social responsibility (CSR) performance.

CSR has captured significant attention in recent years from both researchers and business professionals, and the policies involve three bottom-line dimensions' economic development, community responsibility, and environmental protection aspects (Bansal, 2005; White, 2009; Chikazhe et al., 2022; Freiha, 2023; Mishra and Sharma, 2023; Monfared et al., 2023). Those performances affected one another, crucial for the company's strategic objectives and competitive advantage (Lloret, 2016). Due to the mandatory policies of social responsibility performance, past literature conveys the unforeseen value of CSR performance towards value of a company (Hwang et al., 2021; Javed et al., 2019; Broadstock et al., 2020; Sameer, 2021). Consequently, the value created by CSR will be helpful for stakeholders to assess the company's performance. Through integrity, factual transparency, and corporate philanthropy as the factor for good

management practices, CSR have become an alternative for companies to thrive in between survival of the fittest (Khlif et al., 2015). The application of CSR activities in Indonesia is encouraged through the 2007 Indonesia Law No. 40, which has created new opportunities for Indonesian companies to increase added value. Unfortunately, Indonesia has not yet boosted the use of CSR effectively, unlike other Asian countries (Cheung et al., 2009).

The sudden urgency to apply CSR activities has turned out to be a necessity during the pandemic. Apart from the government, companies can play a notable role in society during the pandemic by aiding support alternatives to the government (Pookayaporn and Sen, 2018; Crane and Matten, 2020; Mahmud et al., 2021; Idris et al., 2022). The involvement of CSR in Indonesian companies creates opportunities to generate additional value for the company's performance during the outbreak. Simultaneously, innovation has become a moral value for companies to respond to on behalf of the demand. Companies must innovate to increase their market share and gain a competitive advantage. Global competition and rapid technology breakthroughs also boost the rate of innovation. By generating indirect value that enables businesses to gain outside knowledge and enhances their capacity to handle information linked to inventive performance, CSR performance can potentially improve the firm's innovation practice—proven by the existing studies on how CSR has a substantial impact on the creation of innovation (Bocquet et al., 2013; Mithani, 2017; Bacinello et al., 2019). Therefore, companies must lead their key objective towards innovation by developing more efficient production processes, improving market performance, and instilling an excellent reputation in consumer perceptions, resulting in a significant competitive advantage that can be sustained (Mady et al., 2021). On the other hand, brand valuation impacts the firm's value by boosting the marketing strategy from a different perspective. Therefore, companies used this opportunity to elevate their brand image through campaigns and promotion that hints the togetherness throughout difficult situations.

In Indonesia, this is the first study that offers new insights into the relationship between ESGD and firm value, with innovation and brand valuation as moderating variables. This study serves as a reference for a better understanding of the role of innovation in the ESGD and firm value link. The data was used from SWA Magazine's 100 most valuable brands of Indonesia, which has an exclusive list of the Indonesian listed companies. In addition, the study also compares ESGD before and during the pandemic, the pre-COVID-19 timeframe studied from 2015 to 2018, while 2019 to 2020 acts as the basis for the course of the COVID-19 timeframe.

2 Literature review and hypotheses development

2.1 ESG disclosure

Stakeholders highly request voluntary disclosure of social and environmental activities due to the commitment to fulfil the responsibility taken up by the company. Transparency, corporate image, and reputation are also considered when announcing voluntary disclosure as it reflects firm value. Consequently, with a higher degree of disclosure between companies and stakeholders, the companies are set to have gained stakeholders' trust (Obeitoh, 2023). To assess the voluntary disclosure, no formal procedures represented the initiatives, which ceased the relevance of the true meaning

behind CSR. As to gathering evidence of disclosure, several selections of measurement tools have been implemented in past studies. Galant and Cadez (2017) mentioned numerous approach which includes survey, questionnaire, and GRI framework (Martinez-Conesa et al., 2017; Laskar and Gopal Maji, 2018; Mendes et al., 2021); Kinder et al. (KLD) Index and Dow Jones Sustainability Index (Devie et al., 2018; Clarkson et al., 2019; Tarigan et al., 2022) which mainly uses from the perspective of corporate reputation by concluding into indices; follow with the use of ESG Rating Index which measure the CSR disclosure (Fatemi et al., 2018; Buchanan et al., 2018; Hendijani Zadeh et al., 2021). The indicator of the disclosure was collected from Bloomberg Terminal's ESG disclosure (ESGD) score (DISC). Bloomberg bases its evaluation of the level of CSR disclosure on the ESGD score.

The ESG score is the total of the three categories' scores, which are the environmental score, social score, and governance score. The measurement scope is classified according to how well the company manages risk-related circumstances. Bloomberg analyses firms annually using publicly accessible ESG data from companies through CSR reports, annual reports, company websites, other open sources, and Bloomberg company surveys. Prior studies solely looked at specific data sources, such as annual reports or websites, whilst Bloomberg weights the ESG data based on its relevance. This paper uses the ESGD score to avoid the limitations of previous studies that used content analysis to score the disclosure practices, which are not standardised and can differ from one another, making comparisons between researchers difficult.

2.2 Innovation

Since businesses must adapt to external constraints to achieve their objectives, innovation has received attention as a competitive driver throughout the past few decades. Innovation is generally recognised through accomplishments involving tangible 'items' bearing mechanical, structural, or scientific attributes (Mars, 2013; Gosetti, 2020; Najjar and Ajjaka, 2022). The underlying concept of innovation has been well-researched, and several scholars have come to diverse conclusions. Nevertheless, the base of innovation complies with the theories originated by Schumpeter, which expresses the adoption of innovative concepts in creating goods or procedures. According to the Oslo Manual guidelines (OECD, 2005), product innovation is concerned with the development and commercialisation of new or enhanced product lines; process innovation is concerned with the addition of brand-new equipment to manufacturing processes; while marketing innovation deals with introducing novel marketing techniques, organisational innovation deals with creating a new organisational structure. Two of the five innovation categories that Schumpeter separates are technological advances, including new goods and processes. The remaining ones, however, are associated with non-technological breakthroughs including new markets, organisational structures, and resource development. Innovation can be defined as introducing new or significantly improved products, services, organisational structures, or marketing strategies, among other things.

In the present era, continuous improvement of innovation has progressed rapidly, and businesses are utilising innovation-based business models. Since global warming and environmental degradation continue to pose severe challenges to the world's population, 'eco-innovation' has gained popularity. Adopting green product conceptual design and research and development (R&D) can contribute to accomplishing environmental goals. This brings eco-innovation, also known as green innovation (GI), a necessary practice for

managing ecological challenges and providing dual externalities that effectively regulate litter and resource waste (Pan et al., 2020). GI covers the whole layer of traditional innovation practices. According to the Oslo Manual guideline (OECD, 2005), GI discusses the practice of new products, manufacturing processes, markets, and organisational management, resulting in the reduction of ecological risk.

Various measurements can be used for measuring innovation. Past studies used a primary questionnaire and survey from first-hand sources (Mady et al., 2021; Almeida and Wasim, 2022; Sharma et al., 2022) alongside with content analysis approach (Dugonski and Tumelero, 2021; Costa and Fonseca, 2022). Both environmental and economic indicators are used for the measurement of eco-innovation. From the perspective of environmental indices, most of the past literature utilised air pollution and greenhouse gas (GHG) emissions, water consumption, and electrical usage (Wang and Li, 2018; Yang and Zhang, 2018). Meanwhile, economic indices utilised the export of goods and services, energy consumption, gross domestic product (GDP), revenue, and capital stock (Kiani Mavi et al., 2021). With diverse indices proposed for innovation, some research also considers R&D expenditures (Mendes et al., 2021; Costa and Fonseca, 2022). In this study, R&D expenditure is utilised for the measurement of innovation.

2.2.1 Research and development

Regarding innovation, R&D is the primary driver of innovation within the organisation. R&D triggers companies to compete as it has been proven to increase the relationship of firm value. Unlike others, R&D investment usually holds uncertainty in providing returns. However, R&D is a crucial factor in enhancing market share through producing more effective innovation. Risks and uncertainty convey to the public that R&D is burdensome to implement. Moreover, most companies focus on enhancing their existing products through R&D, which has a different value for each company, further making R&D unable to be benchmarked. Therefore, most investors are eager to make an investment in R&D, creating an issue for most companies in Indonesia, which has low disclosure on the value of R&D.

Indonesia is one of the many emerging countries that has been left behind regarding R&D disclosure. Mady et al. (2021) have mentioned that the lack of coordination between the Indonesian government has become a factor. Most of the research in Indonesia is mainly focused on pursuing academic degrees, commissionaires, and internal purposes. Other cases are caused by the lack of capital for companies to research. Hence, the implementation of R&D in Indonesia is not fully presented within each company. To calculate the R&D, most of the past literature has used R&D intensity, which is measured using the R&D investment over with the total revenue (Lee and Lee, 2019; Liu et al., 2020). In the case of this study, R&D expenditure will be measured using the dummy measurement with '1', where the companies have implemented R&D according to the notes in the annual report whilst '0' if not. This measurement has been utilised in Costa-Campi et al. (2014) and Mady et al (2021) studies.

2.3 Brand valuation

A brand is known as a valuable resource that enhances the firm value (Dacin and Smith, 1994). The brand value determines the worth of goods or services to the extent the customers are willing to purchase them without creating additional value beyond

competitors. Moreover, brand value indicates a company's competitive advantage (Moravcikova and Kliestikova, 2017). Unlike the brand image, the brand value can be viewed from short and long-term company performance. Hence, the importance of maintaining brand image over a short-term period to proceed with a prosperous image, in the long run, will yield a solid brand value. Past literature proposed that brands provide firms with a larger market share and stable revenue all over the business cycle, by having a strong brand, the likelihood of a company yielding a more significant margin, enhancing the stock market, and higher future cash flows (Madden, 2006; Keller, 2008). In particular, the company needs to mobilise alongside integrating resources that deliver exceptional goods and services to develop valuable brands. Establishing a brand ought to be a lengthy process. Additionally, the company can benefit from leveraging and extension strategies once the brand is highly valued (Keller, 2008). As a result, stakeholders could use highly valued brands as an indication to discover companies that are committed to long-term performance.

There are several methods for determining brand value. The SWA Magazine's 100 most valuable brands of Indonesia will be used for this research. Due to its intangibility in measuring the exact valuation of a brand, Brand Finance applied for Royalty Relief Methodology or Relief from Royalty Method (Haigh, 2022). Another reason for utilising SWA Magazine's 100 most valuable brands of Indonesia is due to the scope of research located in Indonesia. This means the valuation will only be limited to Indonesia's listed companies. Thus, this research would like to acknowledge the moderating role of innovation and brand valuation (BV) on the relationships between ESGD and firm value.

2.4 Firm value

Firm value is the key outcome for companies to determine the level of success in addressing stakeholders' needs. By addressing the needs, whether voluntary disclosure or innovation practices, the end goal is to imply that those activities are increasing the wealth of stakeholders (Martinez-Conesa et al., 2017; Aboud and Diab, 2018; Aouadi and Marsat, 2018; Yoo et al., 2022). Various approaches can be used in measuring the firm value. However, some of the well-known approaches are between accounting-based and market-based metrics. As for the accounting-based approach, the measurement will be reflected based on the short-term period of company years utilising return on assets. At the same time, the market-based approach considers the long-term prospects. In the case of voluntary environmental and social disclosure, the continuing effects of practices might not be visible using conventional performance metrics such as return on assets (Fahad and Busru, 2021).

This research will take the measurement from the market-based approach utilising Tobin's Q ratio. Founded by James Tobin, financial literature generally uses Tobin's Q ratio for potential investment opportunities in the future to determine the equilibrium value and the appropriate price of the stock market (Tobin, 1969). Analysts and investors use Tobin's Q ratio to evaluate how the markets have reacted to firm value while considering the effect that CSR has on the present value of future cash flows and the value produced by the asset base. By dividing the company's market value even by the total assets' replacement value, one can determine Tobin's Q ratio (Daines, 2001). The market value is measured using the market value of equity with a company's total debt. Due to a paucity of data, this research will utilise the book value of the company's total assets rather than the replacement value of those assets.

$$Tobin's\ Q = \frac{Market\ Value\ of\ Equity + Total\ Debt}{Total\ Assets} \quad (1)$$

2.5 Control variables

Control variables are other variables that may influence CSR performance. This study uses financial leverage and industry type as the control variables.

2.5.1 Financial leverage

Leverage consists of two subcategories that draw different conclusions, none other than operating and financial leverage. Operating leverage is pinpointed on the operations basis while financing leverage is focused on the companies' borrowing money (Zhang and Zhou, 2020). Past studies have suggested using financial-based leverage using the debt-to-assets ratio, which determines whether the firm value arises from the tax benefits received by the increase in debt level. While firm value may decline due to the market perspective of how companies are liable to a high degree of debt and seen as financially at risk (Yoo et al., 2022).

$$Financial\ Leverage = \frac{Total\ Debt}{Total\ Assets} \quad (2)$$

2.5.2 Industry type

Past scholars have also discovered how the type of industries has concluded different results on the relation of innovation in CSR activities (Reverte et al., 2016). Unlike in the service industry context, CSR activities positively influenced innovation in the manufacturing and technology industries (Yoo et al., 2022). In correlation with the previous studies, the industry type is examined as a control variable to differentiate the outcome of each industry affected by this research. The industry type is classified with communications for 1, consumer discretionary for 2, consumer staples for 3, energy for 4, healthcare for 5, industrials for 6, materials for 7, real estate for 8, and utilities for 9 based on Bloomberg industry classification.

2.6 Research hypotheses

2.6.1 ESGD and firm value

Incorporating ESG performance contributes to value creation for the company's stakeholders by providing services and products of better quality, enhancing employee happiness, fostering goodwill amongst stakeholders, and strengthening consumer loyalty. The implementation can be done through voluntary social and environmental disclosure. Researchers have discovered a positive correlation between ESGD and firm value (Adzis et al., 2022).

According to Aboud and Diab (2018), companies with higher rankings in the voluntary disclosure reported in the ESGD index show a positive correlation with the firm value as measured by Tobin's Q ratio, according to a sample of 100 Egyptian companies listed on the EGX100 between 2007 and 2016. Yoon et al. (2018) found that

ESG performance was positively correlated to firm value in Korea, which is evident from the sample of 705 companies listed on the Korea Stock Exchange between 2010 and 2015. Another study by Aouadi and Marsat (2018), ESG controversies affecting firm value, used a sample of 4,000 listed companies in 58 countries between 2002 and 2011. The study has discovered that firm value was not directly affected by ESG, but instead had a positive relationship. Previous literature shows how ESGD can boost the firm value. A higher ESG index for companies will significantly affect firm value and only applies to companies with larger firm size, better performance, higher reputation, and located in a country with the liberty of speech. Based on the result of earlier research, the study hypothesises that:

H1 Firm value is positively significantly influenced by ESGD.

2.6.2 Innovation and firm value

Over the past years, regulatory bodies have been pressuring business executives to implement innovation in process industries to lessen the environmental impact of production emissions (Iqbal et al., 2022). Cai and Li (2018) discovered that businesses can accomplish the estimated goals outlined in the Sustainable Development Goals (SDGs) by creating innovations that satisfy economic, social, and environmental duties. By utilising the samples collected from 442 companies in China to look at the links between GI and firm value. Agustia et al. (2019) mentioned that GI and firm value have a positive relationship using the sample of 277 companies listed on the Indonesia Stock Market between 2012 and 2015. In addition, the companies that successfully implement GI will attain economic value and a competitive advantage, creating value for the firm. Another research from Zhang et al. (2019) discovered a positive link and noteworthy relationship between GI and firm value by investigating listed companies in China from 2000 to 2010. Additionally, Wellalage and Fernandez (2019) found a positive link between innovation and SMEs' market value from a sample of 13,430 companies in Eastern Europe and Central Asian countries. Companies can cut expenses, boost sales, and increase profitability by investing in R&D. To conclude these findings, companies will be encouraged to turn production waste into valuable goods that raise the firm value. Products made with innovation are more environmentally conscious than those made using conventional methods. Resulting a hypothesis in the following:

H2 Innovation has a positive significant influence on firm value.

2.6.3 Brand valuation and firm value

Based on neo-Schumpeterian theory is to take into account both marketing and organisational innovation. By utilising brand valuation, the past literature connects the positive link between brand value and firm value. According to Kumar et al. (2021), companies with better production performance have stronger brand valuation benefits. Increased brand value is a main point in determining profitability. Due to the chance of repurchasing, brand value able to improves cash flow. The sample was utilised from the top 100 brands ranked by Interbrand. Cao (2022) claimed that the role of brand equity and product innovation can cut the cost of the warranty, which increases the firm value while Gerekan et al. (2019) revealed an optimistic link between brand value and firm growth, through the increase in profitability. Moreover, intangible assets such as brands

and innovative property are proven to have an effect onto the sustainable growth of a firm (Ocak and Fındık, 2019). Based on a viewpoint of neo-Schumpeterian resulting in the outcome of the hypothesis is as follows:

H3 Brand valuation positively influences firm value.

2.6.4 Innovation, ESGD, and firm value

The world has seen considerable environmental deterioration over the last few decades; the exhausting expansion has led to enormous environmental devastation, significantly impacting civilisation. Companies begin to adopt innovation to enhance the social and environmental effects to contribute to society. Innovation is critical in establishing a distinct organisational competitive advantage (Ge et al., 2018; Liu and Atuahene-Gima, 2018). Currently, innovation has played a significant role in firms' performance. Chouaibi and Chouaibi (2021) discovered that innovation strengthens the link between societal and ethical practices and market value creation by observing 523 companies listed on the ESG index in North America and Western Europe between 2005 to 2019.

According to most theoretical and empirical studies, ESGD and innovation are crucial for creating firm value. Mbanyele et al. (2022) found that firms mandated to have social and environmental disclosure have increased their innovation performance. Both Hong et al. (2020) and Ren et al. (2022) claim that implementing GI increases the transparency of ESGD, the study analysed China's regulations regarding mandatory disclosure. The creation of an innovation built on the idea of EGSD incorporates the objectives of the business and its surroundings. Therefore, innovation is one of the most proactive methods to achieve the competitive advantages of environmental growth. As a result, it is becoming increasingly necessary for all businesses to unveil their social and environmental practices. Due to the relationship between innovation and EGSD, adopting an innovation strategy can enhance a company's financial and environmental performance. By determining how the company's financial performance and competitive advantage in the market are impacted by innovation performance, this research proposes the link between EGSD to firm value by considering the context of innovation as the moderating variable. The innovation utilised is based on the approach of the neo-Schumpeterian theory, which not only implies product and process innovations but also takes account of the market and organisational innovations in the context. Hence, the hypotheses resulting from the earlier research are as follows:

H4 Innovation strengthens the positive influence of ESGD with firm value.

2.6.5 Brand valuation, EGSD, and firm value

The link between EGSD and firm value has been the subject of several studies; however, there is no quantitative research on the moderating effects of brand valuation on this relationship. A high level of brand awareness among the intended customers may save clients' search costs and promote repeat business. In other words, brands act as a pathway in understanding the stakeholders through existing and future expectations of how the companies act. Brand values diversify and expand beyond the firms' direct authority and one-way interaction to include potential stakeholder expectations, particularly in the sustainability worldview. Consequently, combining high brand awareness and marketing generates value towards the brand (Padela et al., 2020).

The application of brand awareness towards the social impacts has left an increasing prominence to EGSD, with brands acting as a reflection of values for which customers first came into mind (Golob et al., 2022). Numerous companies have dedicated their CSR to their roots in for the past years, slowly building up to create the best image of their brands. By focusing solely on CSR, companies can be seen as responsible brands (Golob and Podnar, 2018). Based on the previous literature, Bhattacharya et al. (2020) mentioned that CSR actions are linked to greater perceptions of brand value during recessions. CSR initiatives like charitable donations signal to buyers that a business is of greater quality during recessions. This results in a better brand valuation in the eyes of society. The hypothesis arrived as follows:

H5 Brand valuation strengthens the positive influence of ESGD with firm value.

2.6.6 ESGD Before and during COVID-19 pandemic

The COVID-19 pandemic's broad transmission in 2020 has significantly worsened the world economy. Diverse economic sectors have been affected by the pandemic's disruptions, particularly in Indonesia. The public's demand for disclosure has increased in contrast to the time before the pandemic due to the rising health concern. In return, plentiful companies are encouraged to please their stakeholders through the attempt of ESG. Nonetheless, the application of ESG must be altered beforehand to fit the demands of the pandemic.

The earlier research by Hwang et al. (2021) empirically examines the firm value's ESG performance during the business crisis in 2020 Q1, which was the epidemic in Korea. Similarly, Zhang et al. (2022) examined the causal relationship between firms' ESG performance and company value by using a sample of companies listed in the China Stock Market between 2019 Q1 and 2021 Q1. Both outcomes define positive support of ESG toward firm value during the pandemic. As a result, faith and trust between stakeholders and companies are tightly knit from the transparency of social and environmental disclosure during the business crisis.

H6 ESGD before and during the COVID-19 pandemic has a significant difference.

3 Research and methodology

3.1 Population and sample

The population will be based on the 100 most valuable brands of Indonesia by SWA Magazine from 2015 until 2020. The sample is only strictly utilised under the company brands in the 100 most valuable brands of Indonesia by SWA Magazine, any product brands are omitted from the sample. The sampling technique is the method which is shown in Table 1.

3.2 Theoretical model

This paper will examine the moderating role of innovation and brand valuation in ESGD and firm value relationships before and during the COVID-19 pandemic in Indonesia.

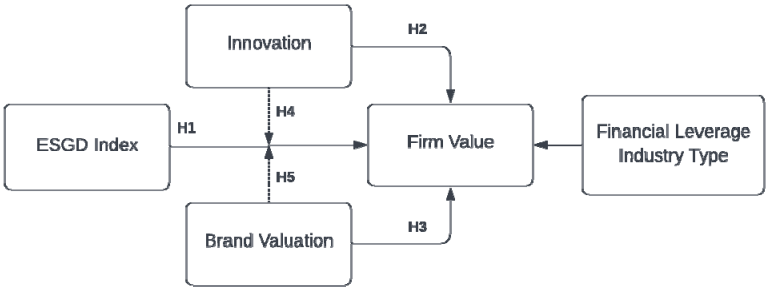
Therefore, Figure 1 is the framework of the analysis model and the statistical equations to be conducted in this study.

Table 1 Sample and sampling criteria

Sampling criteria	*Number of companies*
Companies listed in the 100 most valuable brands of Indonesia for the years 2015–2020	64
Listed companies that are in the banking and finance industries	(19)
Listed companies that did not have adequate and consistent financial information for the years 2015–2020	(18)
Number of companies that fulfil the criteria	27
Total sample used in the research (27 × 6)	162

Source: Author's compilation

Figure 1 Conceptual research model



Source: Author's compilation

$$FValue_{it} = \alpha + \beta_1 \times ESGD_{it} + \beta_2 \times Innovation_{it} + \beta_3 \times BV_{it} + \beta_6 \times Leverage_{it} + \beta_7 \times Industry\ Type_{it} + \varepsilon_{it} \quad (3)$$

$$FValue_{it} = \alpha + \beta_1 \times ESGD_{it} + \beta_2 \times Innovation_{it} + \beta_3 \times BV_{it} + \beta_4 \times ESGD * BV_{it} + \beta_5 \times ESGD * Innovation_{it} + \beta_6 \times Leverage_{it} + \beta_7 \times Industry\ Type_{it} + \varepsilon_{it} \quad (4)$$

This study is utilising two statistical equations to explain the research model. The first formula will only consider the independent variable of ESGD, innovation, and brand valuation towards the firm value without any moderating effects. Meanwhile, the second formula will solely consider the moderating effect of innovation and brand valuation towards the link between ESGD and firm value.

4 Research result and analysis

4.1 Research result

4.1.1 Descriptive statistics

The mean, median, maximum, minimum, and standard deviation of each variable element are calculated using descriptive statistics. The result is summarised in Table 2.

Table 2 Descriptive statistics summary

	Mean	*Median*	*Maximum*	*Minimum*	*Std dev*
wESGD	1.56	1.59	1.82	1.11	0.15
BV	12.41	12.35	13.88	11.35	0.57
ESGDInnovation	8.48	0.00	58.02	0.00	16.82
ESGDBV	6.51	0.00	57.09	0.00	14.62
FValue	2.04	1.27	12.76	0.42	2.10
Leverage	0.24	0.24	0.80	0.00	0.18
IndustryType	4.26	3.00	9.00	1.00	2.47

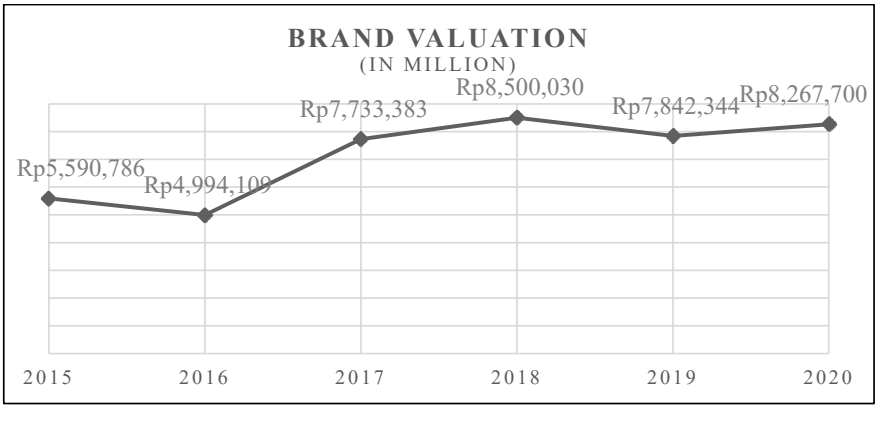
Source: Author's compilation

Table 3 Descriptive statistics for innovation

Innovation											
2015		*2016*		*2017*		*2018*		*2019*		*2020*	
'1'	*'0'*	*'1'*	*'0'*	*'1'*	*'0'*	*'1'*	*'0'*	*'1'*	*'0'*	*'1'*	*'0'*
6	23	6	23	6	22	6	22	7	21	8	21

Source: Author's compilation

Figure 2 Trends of brand valuation



Source: Author's compilation

Based on Table 3, the innovation shows that the frequency of R&D expenditure disclosed in the income statements has steadily increased over the past years. Companies that were consistently providing R&D expenditure in the income statements are AALI, HMSP, KLBF, SMGR, TSPC, and WTON. The average value of brand valuation per year in million, the line graph depicts a fluctuation with the highest leap between 2016 to 2017 by 2,739,283 million IDR.

4.1.2 Panel data estimation model

After the descriptive statistics, the data is processed and analysed using the pooled ordinary least square (OLS) method and the classical assumption test using both collinearity and heteroscedasticity, in which the result is shown in Tables 4–9.

Table 4 OLS results

	Coefficient	*Std. error*	*t-ratio*	*p-value*		*VIF*
const	–11.1420	3.23097	−3.448	0.0007	***	
ESGD	1.20253	1.01450	1.185	0.2377		1.234
BV	1.01841	0.265665	3.833	0.0002	***	1.280
Innovation	0.655060	0.330912	1.980	0.0495	**	1.061
Leverage	−5.37779	0.773363	–6.954	< 0.0001	***	1.045
IndustryType	–0.0514191	0.0625240	–0.8224	0.4121		1.324
Test statistics			47.450418			
p-value			0.000308			

Source: Author's compilation

According to the result in Table 4, the p-value (F) is 5.30e-14. This less than 10% figure indicates that the research model can be accepted. As for the classical assumption test, all variables have a value of VIF lower than 10. Hence, there are no collinearity issues in this study. While the implementation of heteroscedasticity, implying the White's test, depicts a p-value less than 10%. The p-value indicates that the data contains a heteroscedasticity problem, which translates to normally distributed error variances within the data.

Table 5 Panel diagnostic test of regression

	FE estimator	*Breusch-Pagan test*	*Hausman test*
p-value	0.000169368	0.018618	0.00344802
Results	Fixed	Random	Fixed

Source: Author's compilation

Based on the information in Table 5, the fixed effect (FE) model is the most relevant model to apply in this inquiry. Due to the previously mentioned heteroscedasticity issue in the FE model, therefore, the weighted least square (WLS) method is implemented to analyse the research data. The results of using the WLS method are as follows:

Table 6 WLS results

	Coefficient	*Std. error*	*t-ratio*	*p-value*	
const	–6.06798	1.69834	–3.573	0.0005	***
ESGD	1.30935	0.421026	3.110	0.0022	***
BV	0.540326	0.141869	3.809	0.0002	***
Innovation	0.355653	0.174099	2.043	0.0428	**
Leverage	–3.82526	0.412572	–9.272	<0.0001	***
IndustryType	–0.0449468	0.0220748	–2.036	0.0434	**
R-squared	0.455905	Adjusted R-squared	0.438466		
F(5, 156)	26.14289	P-value(F)	4.03e-19		

Source: Author's compilation

According to the results in Table 6, the disclosure of ESG, brand valuation and innovation are highly significant towards the dependent variable, the firm value. The WLS model has a p-value of 4.03e-19, lower than 10%. This means that the F-test is significant, and it can be concluded that the independent variables in this research are valid to test the dependent variable as the variables have significant influences. The R-squared value of 0.438466 means that the independent variables are 43.84%, explaining the dependent variable, while other factors outside the scope of this study are contributing the remaining 56.16%.

Table 7 OLS results for moderating effects

	Coefficient	*Std. error*	*t-ratio*	*p-value*		*VIF*
const	–8.22014	4.68938	–1.753	0.0816	*	
ESGD	0.968049	1.11858	0.8654	0.3882		1.489
BV	0.803836	0.379962	2.116	0.0360	**	2.599
Innovation	–0.00114815	1.13745	–0.001009	0.9992		12.436
ESGDBV	0.0112918	0.0147416	0.7660	0.4449		2.569
ESGDInnovation	0.0163337	0.0283891	0.5753	0.5659		12.599
Leverage	–5.39681	0.779660	–6.922	<0.0001	***	1.054
IndustryType	–0.0406980	0.0648982	–0.6271	0.5315		1.416
Test statistics			71.050281			
p-value			0.000133			

Source: Author's compilation

In the context of the moderating variable, according to the result in Table 7, the p-value (F) is 6.67e-13. This less than 10% figure indicates that the research model can be accepted. The value of VIF for interaction variables is ignored. Hence, there are no collinearity issues in this study. While the findings for the heteroscedasticity test depict a p-value of less than 10%. The p-value indicates that the data contains a heteroscedasticity problem, which translates to normally distributed error variances within the data.

Table 8 Panel diagnostic test of regression for moderating effects

	FE estimator	*Breusch-Pagan test*	*Hausman test*
p-value	0.000233366	0.0133962	0.0281963
Results	Fixed	Random	Fixed

Source: Author's compilation

Based on the results in Table 8, the most suitable model in this study is to utilise the FE model. Due to the previously mentioned heteroscedasticity issue in the FE model, therefore, the WLS method is implemented to analyse the research data. The results of using the WLS method are as follows:

Table 9 WLS results for moderating effects

	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
const	–4.46925	2.01158	–2.222	0.0278	**
ESGD	1.05600	0.447048	2.362	0.0194	**
BV	0.439637	0.167117	2.631	0.0094	***
Innovation	–0.618624	0.472137	–1.310	0.1921	
ESGDBV	0.00244874	0.00633580	0.3865	0.6997	
ESGDInnovation	0.0284904	0.0129862	2.194	0.0297	**
Leverage	–3.67133	0.418651	–8.769	<0.0001	***
IndustryType	–0.0461885	0.0223517	–2.066	0.0405	**
R-squared	0.469148	Adjusted R-squared	0.445018		
F(5, 156)	19.44279	P-value(F)	1.72e-18		

Source: Author's compilation

According to the results in Table 9, the interaction variable of ESGDInnovation is highly significant towards the dependent variable, which is the firm value, whilst the ESGDBV remains insignificant. The WLS model has a p-value of 1.72e-18, which is lower than 10%. The adjusted R-squared value of 0.445018 means that the independent variables are 44.50%, explaining the dependent variable, while other factors outside the scope of this study are contributing the remaining 55.50%.

4.1.3 Paired sample t-test (difference test)

A paired sample t-test is utilised to compare the differences of ESGD before (2015 to 2018) and during the COVID-19 period (2019 to 2020).

Table 10 Paired sample t-test results

		Mean	*t*	*p-value (two-tailed)*
$ESGD_{before}$		1.52969	3.93478	0.0001239
$ESGD_{during}$		1.62185		
$ESGD_{before\text{-}during}$	increase	0.09216		

Source: Author's compilation

For the ESGD comparison, the p-value is 0.0001239, which is less than the 10% significant threshold, showing that the differences in ESGD are very significant.

4.1.4 Hypothesis test

A hypothesis test looks for correlations between the independent and dependent variables because a p-value of less than 10% indicates that the test had an effect. The regression results from the WLS method are summarised in Table 11.

Table 11 Regression results summary

		Panel data analysis (FValue)			
	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
const	–6.06798	1.69834	–3.573	0.0005	***
ESGD	1.30935	0.421026	3.110	0.0022	***
BV	0.540326	0.141869	3.809	0.0002	***
Innovation	0.355653	0.174099	2.043	0.0428	**
Leverage	–3.82526	0.412572	–9.272	<0.0001	***
IndustryType	–0.0449468	0.0220748	–2.036	0.0434	**
p-value		4.03e-19			
Adj R-squared		0.438466			
		Panel data analysis (FValue)			
const	–4.46925	2.01158	—2.222	0.0278	**
ESGD	1.05600	0.447048	2.362	0.0194	**
BV	0.439637	0.167117	2.631	0.0094	***
Innovation	–0.618624	0.472137	–1.310	0.1921	
ESGDBV	0.00244874	0.00633580	0.3865	0.6997	
ESGDInnovation	0.0284904	0.0129862	2.194	0.0297	**
Leverage	–3.67133	0.418651	–8.769	<0.0001	***
IndustryType	–0.0461885	0.0223517	–2.066	0.0405	**
p-value		1.72e-18			
Adj R-squared		0.445018			
		Paired sample t-test			
$ESGD_{before\text{-}during}$	Difference of means	0.09216			
	p-value (2 tailed)	0.0001239			

Source: Author's Compilation

According to Table 11, the first regression analysis found that all variables have significant relationships towards the firm value. In contrast, the second regression analysis, which only pinpoints the moderating effect, has only one significant relationship of innovation as a moderating factor in the association between firm value and ESGD. Meanwhile, the paired sample t-test shows that ESGD significantly differs before and during the COVID-19 pandemic. Hence, there are five out of six hypotheses that are accepted which is shown in Table 12.

Table 12 Hypothesis test results summary

No	*Independent variable*	*Dependent variable*	*Hypothesis*	*t-test result*	*Decision*
1	ESGD	FValue	Positive significant	Positive significant	Accepted
2	Innovation	FValue	Positive significant	Positive significant	Accepted
3	BV	FValue	Positive significant	Positive significant	Accepted
4	ESGDInnovation	FValue	Positive significant	Positive significant	Accepted
5	ESGDBV	FValue	Positive significant	Positive insignificant	Rejected
6	$ESGD_{before}$	$ESGD_{after}$	Significant difference	Significant difference	Accepted

Source: Author's compilation

4.2 Discussion and theory analysis

ESGD has a positive significant influence on firm value. According to Table 12, the analysis shows that ESGD gives a positive significance towards the firm value as implied by the positive coefficient of 1.30935 and p-value of 0.22%, which is lower than the 1% significant level threshold. Therefore, the first hypothesis of this research is accepted. The result is consistent with the previous research from Aboud and Diab (2018) and Yoon et al. (2018), which suggests that ESGD significantly affects firm value. Both studies have concluded that a higher company ESG index will significantly affect firm value.

Innovation has a positive significant influence on firm value. According to Table 12, the analysis shows that innovation gives a positive significance towards the firm value as implied by the positive coefficient of 0.355653 and p-value of 0.43%, which is lower than the 5% significant level threshold. Therefore, the second hypothesis of this research is accepted. The result is consistent with the previous research from Cai and Li (2018), Agustia et al. (2019), Wellalage and Fernandez (2019) and Zhang et al. (2019), which suggest that innovation has a positive significant effect towards firm value. Innovation is the core of continuously improving the firm's products, productions, markets and organisational levels. The ability of companies to continue creating continuous innovation leads to a growth in firm value, which aligns with the neo-Schumpeterian theory.

Brand valuation has a positive significant influence on firm value. According to Table 12, the analysis shows that innovation gives a positive significance towards the firm value as implied by the positive coefficient of 0.540326 and p-value of 0.02%, which is lower than 1% significant level threshold. Therefore, the third hypothesis of this research is accepted. Gerekan et al. (2019), Ocak and Fındık (2019) and Kumar et al. (2021) mentioned that enhancement in brand value is a crucial factor in determining the firm value. Because of brand value, there is an increased chance for customers to repurchase the products given, hence improving a company's cash flow. The enhancement in the company's cash flow has been proven to increase the firm's growth. The neo-Schumpeterian theory mentioned that innovation spans beyond the advancement of technology, which does not limit both products and processes innovation but also considers market and organisational perspectives. The continuous improvement of innovation through brand valuation creates growth in a firm's value.

Innovation strengthens the positive influence of ESGD with firm value. According to Table 12, the analysis shows that innovation is positively significant towards the relationship of ESGD and firm value as implied by the positive coefficient of 0.0284904 and p-value of 0.30%, which is lower than the 5% significant level threshold. Therefore, the fourth hypothesis of this research is accepted. The finding aligns with the previous literature studies from Hong et al. (2020), Chouaibi and Chouaibi (2021), and Ren et al. (2022). The implication of innovation performance is essential for creating firm value, as past researchers found that firms that are mandated to disclose ESG will have an increase in innovation and vice versa. The creation of innovation will create the idea of involving the company objectives through ESGD, as neo-Schumpeterian theory gives an insight as innovation is to be ever-changing and those implement innovations will be impacted by genuine uncertainty with the potential of a competitive advantage, which serves as a value-creating for the firm.

Brand insignificantly strengthens the positive influence of ESGD with firm value. According to Table 12, the analysis shows that brand valuation gives a positive approach yet insignificant towards the relationship of ESGD and firm value as implied by the positive coefficient of 0.00244874 and p-value of 70%, higher than the 10% significant level threshold. Therefore, the fifth hypothesis of this research is rejected. The result contradicts the findings of the past literature of Golob and Podnar (2018) and Golob et al. (2022), where the implementation of high brand value will create a prominent reflection of firm value, which is based on the ESGD of a brand.

ESGD has a significant difference before and during the COVID-19 pandemic. According to the paired sample t-test, the analysis shows that the sample mean of ESGD during COVID-19 is higher than before the pandemic. This result can be seen by comparing the sample mean of 1.52969 from the prior period with 1.62185 during the pandemic, indicating 0.09216 differences. Meanwhile, the two-tailed p-value shows 0.01%, lower than the 1% significant level threshold. Meaning that ESGD has a significant distinction between the COVID-19 pandemic and earlier. Therefore, the sixth hypothesis of this research is accepted. Both Hwang et al. (2021) and Zhang et al. (2022) mentioned the outcomes of ESGD have significantly changes before and during the pandemic.

5 Conclusions

5.1 Theoretical and empirical findings

This study found that ESGD can enhance the firm's value by presenting the implication of a socially responsible company, thus gaining stakeholder interest. Meanwhile, continuous progressive innovation and brand valuation increase a firm's competitive advantage. However, innovation does strengthen the relationship between ESGD and firm value. The firm that creates an innovation to enhance productivity or ability can add value to the disclosure transparency in ESG and firm value. This follows neo-Schumpeterian theory, as the ability of the company to continue creating continuous innovation leads to a growth in firm value. In addition, this study also proved that ESGD is increasing during the pandemic due to the increase in trust between companies and stakeholders. This study demonstrates the stakeholder theory, as the voluntary disclosure of company social and environmental circumstances will contribute towards the

successful operation, and the overall outcome projects the value that lines up with the companies' stakeholders.

5.2 Limitations and future research

Furthermore, this research paper has potential limitations. The scope of this research is limited only to the analysis of ESGD, innovation, brand valuation and firm value for the companies listed in the 100 most valuable brands of Indonesia. The findings of this paper may not fully represent all listed companies in the Indonesian Stock Exchange, and different sample resources for brand valuation out of the scope of SWA Magazine may result in different findings. In addition, the 100 most valuable brands of Indonesia imply that the companies eligible in this sample have already created the best image of their brands way before the implication of ESGD. Therefore, regardless of the disclosure of ESG, customers will solely repurchase based on the brand image. This finding has been further proven in the second linear regression, where the brand valuation is positively significant towards firm value. Hence, brand valuation acts as a purely independent variable. Hence, future research may consider different samples with the same research model to enrich the understanding of ESGD and firm value with the moderating variable of innovation and brand value.

5.3 Policy recommendations

This study solely pinpoints the changes in ESGD before and during the pandemic since the research has the scope of the companies listed in nine industries, resulting in different outcomes between each industry for the changes in firm value before and during the pandemic. However, the result generally shows that the increase in social and environmental disclosure transparency during the pandemic enhances the trust and faith between stakeholders and the companies. Therefore, those findings followed several implications. First, the results show that innovation should be a part of the firms' ESGD strategy. Moreover, it is proposed that corporations should concentrate on how they earn profits rather than merely trying to maximise them. Stakeholder relationships are essential to the growth of the entire firm. In the aftermath of the pandemic, companies are now obligated to do more than publish the ESGD as mandated by law. Beyond that, they must actively and consistently include ESGD as long-term firm strategies, which ultimately show themselves in the firm's worth. To reduce contentious social and environmental issues, ESGD practices must be advocated for all Indonesian businesses. To support the ESGD, corporate legal definitions, goals, and guidance must also be developed.

References

Aboud, A. and Diab, A. (2018) 'The impact of social, environmental and corporate governance disclosures on firm value', *Journal of Accounting in Emerging Economies*, Vol. 8, No. 4, pp.442–458, https://doi.org/10.1108/jaee-08-2017-0079.

Adzis, A.A., Wong, W.C., Nordin, S., Ahmad, A.H. and Mohamed-Arshad, S.B. (2022) 'Analysing the impact of ESG on the performance of Malaysian public-listed companies', *International Journal of Business and Emerging Markets*, Vol. 14, No. 4, pp.415–434.

Agustia, D., Sawarjuwono, T. and Dianawati, W. (2019) 'The mediating effect of environmental management accounting on green innovation – firm value relationship', *International Journal of Energy Economics and Policy*, Vol. 9, No. 2, https://doi.org/10.32479/ijeep.7438.

Almeida, F. and Wasim, J. (2022) 'Eco-innovation and sustainable business performance: perspectives of SMEs in Portugal and the UK', *Society and Business Review*, https://doi.org/10.1108/sbr-12-2021-0233.

Aouadi, A. and Marsat, S. (2018) 'Do ESG controversies matter for firm value? Evidence from international data', *Journal of Business Ethics*, Vol. 151, No. 4, pp.1027–1047, https://doi.org/10.1007/s10551-016-3213-8.

Ayuningtyas, D., Haq, H.U., Utami, R.R. M. and Susilia, S. (2021) 'Requestioning the Indonesia government's public policy response to the COVID-19 pandemic: black box analysis for the period of January–July 2020', *Frontiers in Public Health*, Vol. 9, https://doi.org/10.3389/fpubh.2021.612994.

Bacinello, E., Tontini, G. and Alberton, A. (2019) 'Influence of maturity on corporate social responsibility and sustainable innovation in business performance', *Corporate Social Responsibility and Environmental Management*, Vol. 27, No. 2, pp.749–759, https://doi.org/10.1002/csr.1841.

Bansal, P. (2005) 'Evolving sustainably: a longitudinal study of corporate sustainable development', *Strategic Management Journal*, Vol. 26, No. 3, pp.197–218, https://doi.org/10.1002/smj.441.

Barrett, P., Das, S., Magistretti, G., Pugacheva, E. and Wingender, P. (2021) *After-Effects of the COVID-19 Pandemic: Prospects for Medium-Term Economic Damage*, IMF Working Papers, https://doi.org/10.5089/9781513587905.001.

Bhattacharya, A., Good, V. and Sardashti, H. (2020) 'Doing good when times are bad: the impact of CSR on brands during recessions', *European Journal of Marketing*, Vol. 54, No. 9, pp.2049–2077, https://doi.org/10.1108/EJM-01-2019-0088.

Bocquet, R., Le Bas, C., Mothe, C. and Poussing, N. (2013) 'Are firms with different CSR profiles equally innovative? Empirical analysis with survey data', *European Management Journal*, Vol. 31, No. 6, pp.642–654, https://doi.org/10.1016/j.emj.2012.07.001.

Broadstock, D.C., Matousek, R., Meyer, M. and Tzeremes, N.G. (2020) 'Does corporate social responsibility impact firms' innovation capacity? The indirect link between environmental & social governance implementation and innovation performance', *Journal of Business Research*, Vol. 119, pp.99–110, https://doi.org/10.1016/j.jbusres.2019.07.014.

Buchanan, B., Cao, C.X. and Chen, C. (2018) 'Corporate social responsibility, firm value, and influential institutional ownership', *Journal of Corporate Finance*, Vol. 52, pp.73–95, https://doi.org/10.1016/j.jcorpfin.2018.07.004.

Cai, W. and Li, G. (2018) 'The drivers of eco-innovation and its impact on performance: evidence from China', *Journal of Cleaner Production*, Vol. 176, pp.110–118, https://doi.org/10.1016/j.jclepro.2017.12.109.

Cao, Z. (2022) 'Brand equity, warranty costs, and firm value', *International Journal of Research in Marketing*, Vol. 39, No. 4, pp.1166–1185, https://doi.org/10.1016/j.ijresmar.2022.02.002.

Cheung, Y.L., Tan, W., Ahn, H.J. and Zhang, Z. (2009) 'Does corporate social responsibility matter in Asian emerging markets?', *Journal of Business Ethics*, Vol. 92, No. 3, pp.401–413, https://doi.org/10.1007/s10551-009-0164-3.

Chikazhe, L., Jecha, F., Nyagadza, B., Bhebhe, T. and Manyeruke, J. (2022) 'Mediators of the effect of corporate social responsibility on product uptake: insights from the insurance sector in Harare, Zimbabwe', *International Journal of Business and Emerging Markets*, Vol. 14, No. 4, pp.435–453.

Chouaibi, S. and Chouaibi, J. (2021) 'Social and ethical practices and firm value: the moderating effect of green innovation: evidence from international ESG data', *International Journal of Ethics and Systems*, Vol. 37, No. 3, pp.442–465, https://doi.org/10.1108/ijoes-12-2020-0203.

Clarkson, P., Li, Y., Richardson, G. and Tsang, A. (2019) 'Causes and consequences of voluntary assurance of CSR reports', *Accounting, Auditing & Accountability Journal*, Vol. 32, No. 8, pp.2451–2474, https://doi.org/10.1108/aaaj-03-2018-3424.

Costa, J. and Fonseca, J.P. (2022) 'The impact of corporate social responsibility and innovative strategies on financial performance', *Risks*, Vol. 10, No. 5, p.103, https://doi.org/10.3390/risks10050103.

Costa-Campi, M., Duch-Brown, N. and García-Quevedo, J. (2014) 'R&D drivers and obstacles to innovation in the energy industry', *Energy Economics*, Vol. 46, pp.20–30, https://doi.org/10.1016/j.eneco.2014.09.003.

Crane, A. and Matten, D. (2020) 'COVID-19 and the Future of CSR Research', *Journal of Management Studies*, Vol. 58, No. 1, pp.280–284, https://doi.org/10.1111/joms.12642.

Dacin, P.A. and Smith, D.C. (1994) 'The effect of brand portfolio characteristics on consumer evaluations of brand extensions', *Journal of Marketing Research*, Vol. 31, No. 2, p.229, https://doi.org/10.2307/3152196.

Daines, R. (2001) 'Does Delaware law improve firm value?', *Journal of Financial Economics*, Vol. 62, No. 3, pp.525–558, https://doi.org/10.1016/s0304-405x(01)00086-1.

Devie, D., Liman, L.P., Tarigan, J. and Jie, F. (2018) 'Corporate social responsibility, financial performance and risk in Indonesian natural resources industry', *Social Responsibility Journal*, Vol. 16, No. 1, pp.73–90, https://doi.org/10.1108/srj-06-2018-0155.

Donthu, N. and Gustafsson, A. (2020) 'Effects of COVID-19 on business and research', *Journal of Business Research*, Vol. 117, pp.284–289, https://doi.org/10.1016/j.jbusres.2020.06.008.

Dugonski, F.C.V. and Tumelero, C. (2021) 'Barriers and facilitators of technological eco-innovations: a multilevel analysis in a Brazilian cosmetics company', *Innovation & Management Review*, Vol. 19, No. 3, pp.237–251, https://doi.org/10.1108/inmr-07-2021-0131.

Fahad, P. and Busru, S. A. (2021) 'CSR disclosure and firm performance: evidence from an emerging market', *Corporate Governance: The International Journal of Business in Society*, Vol. 21, No. 4, pp.553–568, https://doi.org/10.1108/cg-05-2020-0201.

Fatemi, A., Glaum, M. and Kaiser, S. (2018) 'ESG performance and firm value: the moderating role of disclosure', *Global Finance Journal*, Vol. 38, pp.45–64, https://doi.org/10.1016/j.gfj.2017.03.001.

Freiha, S.S. (2023) 'Corporate governance and corporate social performance in Lebanese banking sector', *EuroMed Journal of Management*, Vol. 5, No. 2, pp.102–117.

Galant, A. and Cadez, S. (2017) 'Corporate social responsibility and financial performance relationship: a review of measurement approaches', *Economic Research-Ekonomska Istraživanja*, Vol. 30, No. 1, pp.676–693, https://doi.org/10.1080/1331677x.2017.1313122.

Ge, B., Yang, Y., Jiang, D., Gao, Y., Du, X. and Zhou, T. (2018) 'An empirical study on green innovation strategy and sustainable competitive advantages: path and boundary', *Sustainability*, Vol. 10, No. 10, p.3631, https://doi.org/10.3390/su10103631.

Gerekan, B., Pehlivan, A. and Kocan, M. (2019) 'The effect of firm growth on brand value: evidence from brand finance Turkey-100', *Asian Economic and Financial Review*, Vol. 9, No. 9, pp.1067–1076, https://doi.org/10.18488/journal.aefr.2019.99.1067.1076.

Golob, U. and Podnar, K. (2018) 'Researching CSR and brands in the here and now: an integrative perspective', *Journal of Brand Management*, Vol. 26, No. 1, pp.1–8, https://doi.org/10.1057/s41262-018-0112-6.

Golob, U., Burghausen, M., Kernstock, J. and Davies, M.A.P. (2022) 'Brand management and sustainability: exploring potential for the transformative power of brands', *Journal of Brand Management*, Vol. 29, No. 6, pp.513–519, https://doi.org/10.1057/s41262-022-00293-7.

Gosetti, G. (2020) 'Innovation and quality of working life: perspectives and dimensions for analysis', *International Journal of Work Innovation*, Vol. 2, No. 4, pp.284–307.

Haigh, R. (2022) 'How we value the brands in our annual rankings', *Brand Finance*, 7 June [online] https://brandfinance.com/insights/methodology-brands-annual-rankings (accessed 5 September 2023).

Hendijani Zadeh, M., Magnan, M., Cormier, D. and Hammami, A. (2021) 'Does corporate social responsibility transparency mitigate corporate cash holdings?', *International Journal of Managerial Finance*, https://doi.org/10.1108/ijmf-07-2021-0339.

Hong, M., Drakeford, B. and Zhang, K. (2020) 'The impact of mandatory CSR disclosure on green innovation: evidence from China', *Green Finance*, Vol. 2, No. 3, pp.302–322, https://doi.org/10.3934/gf.2020017.

Hwang, J., Kim, H. and Jung, D. (2021) 'The effect of ESG activities on financial performance during the COVID-19 pandemic – evidence from Korea', *Sustainability*, Vol. 13, No. 20, p.11362, https://doi.org/10.3390/su132011362.

Idris, R., Idris, R., Yussof, K., Morshidi, A. and Abas, A. (2022) 'Online work adjustment in the sustainable development context during COVID-19 pandemic: a systematic literature review', *International Journal of Work Innovation*, Vol. 3, No. 3, 10.1504/IJWI.2022.127668.

Iqbal, U., Nadeem, M., Gull, A.A. and Kayani, U.N. (2022) 'Environmental innovation and firm value: The moderating role of organizational capital', *Journal of Environmental Management*, Vol. 316, p.115253, https://doi.org/10.1016/j.jenvman.2022.115253.

Javed, M., Rashid, M.A., Hussain, G. and Ali, H.Y. (2019) 'The effects of corporate social responsibility on corporate reputation and firm financial performance: moderating role of responsible leadership', *Corporate Social Responsibility and Environmental Management*, Vol. 27, No. 3, pp.1395–1409, https://doi.org/10.1002/csr.1892.

Keller, K.L. (2008) *Strategic Brand Management: Building, Measuring and Managing Brand Equity*, 3rd ed., Pearson Prentice Hall, Upper Saddle River.

Khlif, H., Guidara, A. and Souissi, M. (2015) 'Corporate social and environmental disclosure and corporate performance', *Journal of Accounting in Emerging Economies*, Vol. 5, No. 1, pp.51–69, https://doi.org/10.1108/jaee-06-2012-0024.

Kiani Mavi, R., Kiani Mavi, N., Farzipoor Saen, R. and Goh, M. (2021) 'Eco-innovation analysis of OECD countries with common weight analysis in data envelopment analysis', *Supply Chain Management: An International Journal*, Vol. 27, No. 2, pp.162–181, https://doi.org/10.1108/scm-01-2021-0038.

Kumar, R., Sujit, K.S., Waheed, K. A. and Fernandez, M. (2021) 'Are brand value and firm value related? an empirical examination', *Global Business Review*, 097215092199547, https://doi.org/10.1177/0972150921995479.

Laskar, N. and Gopal Maji, S. (2018) 'Disclosure of corporate sustainability performance and firm performance in Asia', *Asian Review of Accounting*, Vol. 26, No. 4, pp.414–443, https://doi.org/10.1108/ara-02-2017-0029.

Lee, N. and Lee, J. (2019) 'External financing, R&D intensity, and firm value in biotechnology companies', *Sustainability*, Vol. 11, No. 15, p.4141, https://doi.org/10.3390/su11154141.

Liu, F., Kim, B. C. and Park, K. (2020) 'Supplier-base concentration as a moderating variable in the non-linear relationship between R&D and firm value', *Asian Journal of Technology Innovation*, Vol. 30, No. 2, pp.342–363, https://doi.org/10.1080/19761597.2020.1853576.

Liu, W. and Atuahene-Gima, K. (2018) 'Enhancing product innovation performance in a dysfunctional competitive environment: the roles of competitive strategies and market-based assets', *Industrial Marketing Management*, Vol. 73, pp.7–20, https://doi.org/10.1016/j.indmarman.2018.01.006.

Lloret, A. (2016) 'Modeling corporate sustainability strategy', *Journal of Business Research*, Vol. 69, No. 2, pp.418–425, https://doi.org/10.1016/j.jbusres.2015.06.047.

Madden, T.J. (2006) 'Brands matter: an empirical demonstration of the creation of shareholder value through branding', *Journal of the Academy of Marketing Science*, Vol. 34, No. 2, pp.224–235, https://doi.org/10.1177/0092070305283356.

Mady, K., Abdul Halim, M.A.S. and Omar, K. (2021) 'Drivers of multiple eco-innovation and the impact on sustainable competitive advantage: evidence from manufacturing SMEs in Egypt', *International Journal of Innovation Science*, Vol. 14, No. 1, pp.40–61, https://doi.org/10.1108/ijis-01-2021-0016.

Mahmud, A., Ding, D. and Hasan, M. M. (2021) 'Corporate social responsibility: business responses to coronavirus (COVID-19) pandemic', *SAGE Open*, Vol. 11, No. 1, 215824402098871, https://doi.org/10.1177/2158244020988710.

Mars, M.M. (2013) 'framing the conceptual meaning and fundamental principles of innovation', *A Cross-Disciplinary Primer on the Meaning and Principles of Innovation*, pp.1–12, https://doi.org/10.1108/s1048-4736(2013)0000023003.

Martinez-Conesa, I., Soto-Acosta, P. and Palacios-Manzano, M. (2017) 'Corporate social responsibility and its effect on innovation and firm performance: an empirical research in SMEs', *Journal of Cleaner Production*, Vol. 142, pp.2374–2383, https://doi.org/10.1016/j.jclepro.2016.11.038.

Mbanyele, W., Huang, H., Li, Y., Muchenje, L.T. and Wang, F. (2022) 'Corporate social responsibility and green innovation: Evidence from mandatory CSR disclosure laws', *Economics Letters*, Vol. 212, p.110322, https://doi.org/10.1016/j.econlet.2022.110322.

Mendes, T., Braga, V., Correia, A. and Silva, C. (2021) 'Linking corporate social responsibility, cooperation and innovation: the triple bottom line perspective', *Innovation & Management Review*, https://doi.org/10.1108/inmr-03-2021-0039.

Mishra, K.M. and Sharma, V. (2023) 'The mediating role of environmental values on green entrepreneurial intention factors: an empirical study from higher education students', *International Journal of Work Innovation*, Vol. 4, No. 3, pp.240–269.

Mithani, M.A. (2017) 'Innovation and CSR – do they go well together?', *Long Range Planning*, Vol. 50, No. 6, pp.699–711, https://doi.org/10.1016/j.lrp.2016.08.002.

Monfared, A.R.K., Mansouri, A. and Hosseini, E. (2023) 'Do environmental factors affect the market atmosphere, amount of purchases and customer attitude?', *International Journal of Business and Emerging Markets*, Vol. 15, No. 2, pp.194–217.

Moravcikova, D. and Kliestikova, J. (2017) 'Brand building with using phygital marketing communication', *Journal of Economics, Business and Management*, Vol. 5, No. 3, pp.148–153, https://doi.org/10.18178/joebm.2017.5.3.503.

Najjar, N. and Ajjaka, L. (2022) 'E-learning: innovations and challenges in the new millennia', *EuroMed Journal of Management*, Vol. 5, No. 1, pp.71–82.

Obeitoh, O.O., Bulusson, A.M. and Yusuf, I. (2023) 'Board characteristics and firm performance: the moderating role of board expertise', *EuroMed Journal of Management*, Vol. 5, Nos. 3–4, pp.185–209.

Ocak, M. and Fındık, D. (2019) 'The impact of intangible assets and sub-components of intangible assets on sustainable growth and firm value: evidence from Turkish listed firms', *Sustainability*, Vol. 11, No. 19, p.5359, https://doi.org/10.3390/su11195359.

OECD (2005) *Oslo Manual. The Measurement of Scientific and Technological Activities*, https://doi.org/10.1787/9789264013100-en.

Padela, S.M.F., Wooliscroft, B. and Ganglmair-Wooliscroft, A. (2020) 'Brand externalities: a taxonomy', *Journal of Macromarketing*, Vol. 41, No. 2, pp.356–372, https://doi.org/10.1177/0276146720961462.

Pan, X., Sinha, P. and Chen, X. (2020) 'Corporate social responsibility and eco-innovation: the triple bottom line perspective', *Corporate Social Responsibility and Environmental Management*, Vol. 28, No. 1, pp.214–228, https://doi.org/10.1002/csr.2043.

Pookayaporn, J. and Sen, S.K. (2018) 'Economic value added and ecology value added as a measure for disaster preparedness linked to corporate social responsibility: Japan as a test-bed bridging Asia and North America', *International Journal of Business and Emerging Markets*, Vol. 10, No. 3, p.304, https://doi.org/10.1504/ijbem.2018.10013043.

Ren, S., Huang, M., Liu, D. and Yan, J. (2022) 'Understanding the impact of mandatory CSR disclosure on green innovation: evidence from Chinese listed firms', *British Journal of Management*, https://doi.org/10.1111/1467-8551.12609.

Reverte, C., Gómez-Melero, E. and Cegarra-Navarro, J.G. (2016) 'The influence of corporate social responsibility practices on organizational performance: evidence from eco-responsible Spanish firms', *Journal of Cleaner Production*, Vol. 112, pp.2870–2884, https://doi.org/10.1016/j.jclepro.2015.09.128.

Sameer, I. (2021) 'Impact of corporate social responsibility on organization's financial performance: evidence from Maldives public limited companies', *Future Business Journal*, Vol. 7, No. 1, https://doi.org/10.1186/s43093-021-00075-8.

Sharma, N., Paço, A. and Kautish, P. (2022) 'The impact of eco-innovation on green buying behaviour: the moderating effect of emotional loyalty and generation', *Management of Environmental Quality*, Vol. 33, No. 4, pp.1026–1045, https://doi.org/10.1108/meq-11-2021-0267.

Sun, P., Lu, X., Xu, C., Sun, W. and Pan, B. (2020) 'Understanding of COVID-19 based on current evidence', *Journal of Medical Virology*, Vol. 92, No. 6, pp.548–551, https://doi.org/10.1002/jmv.25722.

Tarigan, J., Sutedjo, A.N., Jie, F. and Hatane, S.E. (2022) 'The influence of corporate social responsibility on share price before and after tax amnesty', *World Review of Entrepreneurship, Management and Sustainable Development*, Vol. 18, No. 3, pp.227–248, https://doi.org/10.1504/WREMSD.2022.122528.

Tobin, J. (1969) 'A general equilibrium approach to monetary theory', *Journal of Money, Credit and Banking*, Vol. 1, No. 1, p.15, https://doi.org/10.2307/1991374.

Wang, D. and Li, T. (2018) 'Carbon emission performance of independent oil and natural gas producers in the United States', *Sustainability*, Vol. 10, No. 1, p.110, https://doi.org/10.3390/su10010110.

Wellalage, N.H. and Fernandez, V. (2019) 'Innovation and SME finance: evidence from developing countries', *International Review of Financial Analysis*, Vol. 66, p.101370, https://doi.org/10.1016/j.irfa.2019.06.009.

Yang, L. and Zhang, X. (2018) 'Assessing regional eco-efficiency from the perspective of resource, environmental and economic performance in China: a bootstrapping approach in global data envelopment analysis', *Journal of Cleaner Production*, Vol. 173, pp.100–111, https://doi.org/10.1016/j.jclepro.2016.07.166.

Yoo, C., Yeon, J. and Lee, S. (2022) 'Beyond "good company": the mediating role of innovation in the corporate social responsibility and corporate firm performance relationship', *International Journal of Contemporary Hospitality Management*, Vol. 34, No. 10, pp.3677–3696, https://doi.org/10.1108/ijchm-10-2021-1288.

Yoon, B., Lee, J. and Byun, R. (2018) 'Does ESG performance enhance firm value? Evidence from Korea', *Sustainability*, Vol. 10, No. 10, p.3635, https://doi.org/10.3390/su10103635.

Zhang, D., Rong, Z. and Ji, Q. (2019) 'Green innovation and firm performance: evidence from listed companies in China', *Resources, Conservation and Recycling*, Vol. 144, pp.48–55, https://doi.org/10.1016/j.resconrec.2019.01.023.

Zhang, D., Wang, C. and Dong, Y. (2022) 'How does firm ESG performance impact financial constraints? An experimental exploration of the COVID-19 pandemic', *The European Journal of Development Research*, https://doi.org/10.1057/s41287-021-00499-6.

Zhang, X. and Zhou, H. (2020) 'Leverage structure and stock price synchronicity: evidence from China', *PLoS ONE*, Vol. 15, No. 7, p.e0235349, https://doi.org/10.1371/journal.pone.0235349.