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Do Corporate Social Responsibility, Green Culture, and Environmental Uncertainty Enhance Sustainable Performance? Exploring the Role of Social Media Moderation

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ABSTRACT

This study aims to analyze the effects of corporate social responsibility, environmental uncertainty, and green culture on sustainable performance with social media as a moderating variable. Using a quantitative technique, the research polled 196 people in middle-to-upper management roles at Indonesian Stock Exchange-listed and non-listed businesses. Using Smart PLS and SPSS, we conducted multiple linear regression analysis. Corporate social responsibility and green culture significantly improve sustainable performance, according to this study. At the same time, social media cannot moderate the impact of CSR and green culture on sustainable performance, and environmental uncertainty has no detrimental influence. Companies need to integrate CSR and green culture into their business strategies because a good reputation in this regard can attract consumers, investors and employees. Investing in these practices can provide long-term benefits in terms of brand image, competitive advantage, and financial ruin.

1. INTRODUCTION

In a World Economic Forum report by Charlton [1] regarding the Conference of the Parties 28, it becomes evident that corporations are now confronted with a critical global challenge posed by the extreme climate crisis. The global challenge also significantly impacts the Asian continent, where agricultural sector productivity losses including the detriment to crops and livestock, are predominantly attributed to climate change that adversely affects the quantity and quality of wheat and rice crops [2]. This aligns with research showing that supply chain disruptions carry substantial financial and social risks, imperiling the reputation of multinational corporations involved with suppliers demonstrating poor sustainable practices [3]. Climate change also causes extreme temperatures that stress the U.S. energy system, failing cooling systems can lead to high indoor temperatures that endanger workers' health and reduce productivity [4]. That condition affects the job stress level and work motivation which in turn affects their job performance and leads to low organizational performance [5].

The problem of climate change affecting sustainable performance does not only occur at the global level but also has a direct impact on companies in Indonesia. As an archipelagic country with a tropical climate, Indonesia is ranked in the top third countries that feel the impact of climate change with high exposure to all types of flooding, and extreme heat [6]. One of the areas in Indonesia, central Sulawesi intensified floods and landslides, attributed to climate change, have resulted in significant losses for the mining industry and hindered company operations [7]. Climate change is also increasing the frequency and intensity of marine heatwaves in Indonesia, which is projected to significantly impact fisheries, resulting in declines in catch potential and overall productivity, and causing negativity to economic performance [8]. Good productivity can encourage economic performance which will attract the attention of investors to make investment decisions and increase competitive advantage, so that in response to various external challenges companies must formulate and implement sustainable practices to ensure long-term resilience and survival.

At the local, regional, and global levels, sustainable performance is a company's duty to enhance and fortify the interdependent and mutually reinforcing essential elements of social development, economic growth, and environmental preservation [9]. Sustainable performance also allows businesses to establish resilient risk management strategies, enhancing adaptability and strength during challenging circumstances, one of which is related to climate change [10]. Companies that implement sustainable performance can expand their operation, maintain financial stability, and create new jobs for the unemployed which can contribute to achieving the Sustainable Development Goals (SDGs) by 2030, particularly SDG 8 on decent work and economic growth. Addressing this issue, the research focuses on the company's sustainable performance and calls for further investigation into the influencing factors, because companies demonstrating superior sustainable performance are indicated to experience a relatively modest decline in value amidst external challenges. Several aspects that are worth paying attention to involve Corporate Social Responsibility (CSR) practices by Bai and Zhang [11], the level of environmental

uncertainty by Zhang et al. [12], green culture by Andrian et al. [13], and social media application Ali et al. [14], a comprehensive understanding of the interactions between these factors become crucial in an era of uncertainty and rapid change to achieve sustainable performance.

Companies that go beyond what is required by law to incorporate social, environmental, ethical, and consumer concerns into their operations to benefit their stakeholders and shareholders are said to be engaging in corporate social responsibility (CSR) [15, 16]. Rijiba et al. [17] show that CSR positively impacts sustainable performance because the establishment of robust stakeholder engagement, particularly with investors inclined towards purchasing shares, serves as a pivotal mechanism enabling the enduring sustainability of the company. Additionally, a study by Feng et al. [18] proves that CSR Implementation such as waste management and recycling positively impacts sustainable performance because it can minimize waste reduce cost, improve product quality, and gain public and government support. These results are also supported by the past study of Ghaderi et al. [19] according to which, companies that practice corporate social responsibility (CSR) are more likely to have management that prioritizes product and service quality, as well as those that use production methods and marketing strategies that bring both monetary and emotional benefits to their customers. As per the researcher's findings, companies perceive CSR investment as an expenditure that detrimentally affects financial performance and can negatively affect sustainable performance [20]. Additionally, Yu and Zhao [21] reveal that CSR can lead to over-investment and not cost-effectiveness so it can reduce firm value and sustainability.

Environmental uncertainty is an indication of changes in market niches and consumers' preferences, which in turn causes another layer of instability in the market [22]. Based on a study by Jia and Li [23] discovered that businesses' sustainability performance takes a hit when political unrest, economic policy uncertainty, and climate change all play a role. Additionally, Wong et al. [24] demand uncertainty negatively impacts a firm's operational and financial performance and can disrupt sustainable performance because uncertainty in demand increases coordination and inter-organizational activities that may decrease operational performance and increase costs. External uncertainty negatively impacts SMEs' performance resulting in decreased SME performance among the three indicators inflation, competitor behavior, and natural disasters [25]. Besides, research from Pourali et al. [26] and Bae [27] gave results that environmental uncertainty does not have a significant negative effect on fluctuations in profitability so it does not disrupt a company's sustainable performance. Green organizational culture encompasses commonly held beliefs, values, norms, symbols, and societal expectations concerning the management of an organization's environmental aspects and the establishment of the customary conduct anticipated by its members [28]. A study by Chandra et al. [29] stated that the better implementation of green organizational culture will positively impact firms' performance which can lead firms to be more sustainable. A better public perception of a company may be achieved by elevating its green orientation inside the company's culture, so it can increase the competitive advantage and lead the company to sustain itself [30]. Additionally, it is also in line with research by Roespinoedji et al. [31] that companies that embrace a green organizational culture and create improvement in green innovation, lead to increased company performance. The absence of conclusive results has kept academics focused on the correlation between green organizational culture and a company's performance, although several studies have shown a connection between the two [32], as proven by Shazad et al. [33], there is no evident connection between an environmentally conscious organizational culture and the overall performance of the organization.

While studies have explored each impact of CSR, green culture, and environmental uncertainty on sustainable performance, there remains a noticeable gap in research concerning the utilization of social media as a moderation variable. For instance, Jia and Li [23] investigation highlights how environmental uncertainty can detrimentally affect sustainable performance. Conversely, Feng et al. [18] provide evidence supporting the positive influence of CSR variables on sustainable performance. Similarly, Al-Hakimi [34] underscores the beneficial effects of integrating green practices into organizational strategies. Meanwhile, Hur et al. [35] establish that marketing applications for social media often enable information sharing and have been crucial in improving firms' performance because social media may impact how firms handle and react to environmental problems, incorporate sustainable practices, and participate in socially responsible endeavors. Social media use allows the improvement of sustainable performance, obtaining the following main benefits: increase in decision-making efficiency, revenue generation, cost reduction, improvement of innovative business processes, company image, and customer relationships [36].

Ensuring sustainable performance has become paramount in the strategic decision-making processes of firms, especially amidst tensions from the host community and diminishing investor expectations. The main objective of the research was to investigate the impact of CSR practices, green culture, and environmental uncertainty and explore how the utilization of social media marketing aids aimed at improving firm sustainable performance. It does so by addressing the need to bridge existing gaps and broaden the applicability of the link between corporate social responsibility practices, social media application, and the sustainable performance of companies using cross-industry panel data sets. The research commences with an introduction to the conceptual background, followed by an explanation of the research methodology and the dataset collected from recruited respondents. Subsequently, it presents the analysis and results, and finally, concludes with the study findings of theory and practices, along with suggestions for potential future research directions.

2. LITERATURE REVIEW

2.1 Stakeholder theory

As described by Pamar et al. [37] stakeholder theory provides a comprehensive perspective on how organizations can identify and respond to the various groups that have an interest in or can influence the achievement of organizational goals. Additionally, Horisch et al. [38] prove that sustainability management and stakeholder theory agree on the value of generating a profit and the role of businesses, accept the complexity of the sustainability problem, and connect it to the field of strategic management. Any organization may achieve sustainable performance if its stakeholders are

involved in making improvements to performance and in influencing the adoption of sustainable supply chain initiatives into the company's operations and manufacturing process [39]. Research by Strand and Freeman [40] asserts that stakeholder engagement can enhance sustainable performance, due to its ability to foster transparency, accountability, and collaboration within organizations. There is a consensus among several authors regarding a particular matter, namely, the consistent acknowledgment of the significance of stakeholders and the attention given to social and environmental matters [41].

2.2 Contingency theory

Contingency theory was coined by Fiedler [42] that explain the Leaders-Managerial-Adaptation theory, which means that the Leader tries to adapt to different situations. Based on Gardin and Greve [43], the fundamental principle of contingency theory is that there exists an ideal structural configuration that is most suitable for a specific strategy, leading to the best possible performance. In their work, Pryshlakivsky and Searcy [44] utilized contingency theory to create and introduce a heuristic model for determining trade-offs within corporate sustainability performance measurement systems. In doing so, the authors underscored the importance of incorporating contingency factors into the framework for addressing sustainability issues. Recognizing the intricate nature of sustainability may highlight the need to adopt the contingency approach [45].

Lueg and Borisov [46] also contended that contingency theory has garnered significant interest, particularly in the context of environmental uncertainty. Adopting the perspective of contingency theory reveals that nonfinancial factors have a substantial impact, particularly in the connection between organizational strategy, environmental strategy, and organizational performance [47]. Contingency theory significantly impacts how organizations navigate environmental uncertainty and, in turn, influences sustainable business performance. In the realm of environmental uncertainty, characterized by dynamic and unpredictable factors, contingency theory asserts that organizational structures and strategies should align with the specific demands of the environment. By adopting a contingency approach, businesses can develop flexible frameworks that enable them to adapt swiftly to changes in the external landscape, such as regulatory shifts or market fluctuations.

2.3 Corporate social responsibility and sustainable performance

Some advantages, such as improved financial performance, may be attributed to CSR activities that have been the subject of prior research into the effects of stakeholder influence [48]. This suggests that stakeholders play a crucial role in implementing CSR initiatives. Addressing the demands of stakeholders directly contributes to enhancing the value of the company by building long-term trust, which in turn improves the sustainable performance of the company. CSR implementation positively impacts sustainable performance such as waste management and recycling because it can minimize waste, reduce costs, and gain public and government support [18]. These results are also supported by the past study of Ghaderi et al. [19] according to which, companies that practice corporate social responsibility (CSR) are more likely to have management that prioritizes product and service quality, as well as those that use production methods and marketing strategies that bring both monetary and emotional benefits to their customers.

Research by Shahzad et al. [33] reported a positive association of CSR with sustainable performance and proposed that socially responsible practices positively impact the sustainable performance of the organization. Likewise, Hou [49] stated CSR practices directed at the environment positively impact sustainable business performance. Additionally, research by Rijiba et al. [17] also shows that CSR positively impacts sustainable performance because the establishment of robust stakeholder engagement, particularly with investors inclined towards purchasing shares, serves as a pivotal mechanism enabling the enduring sustainability of the company. Beyond what is required by law, corporate social responsibility (CSR) may be defined as an organization's efforts to improve society and the environment while also prioritizing the needs of its customers and other stakeholders to increase profits for stockholders and other interested parties [15, 16]. Building upon the arguments presented above, the hypothesis was formulated as follows:

H1: Corporate social responsibility positively impacts sustainable performance

2.4 Environmental uncertainty and sustainable performance

The study by Cadeaux and Ng [50] reveals that environmental uncertainty adversely affects company performance, leading to disruptions in marketing distribution channels and a subsequent decline in sales volume which can negatively affect sustainable performance. Additionally, Chan et al. [51] underscore that environmental uncertainty is a situational challenge, complicating management's ability to foresee the company's sustainability due to shifts in the external environment. Contingency theory suggests that the strategic fitness between supply chain integrative behavior and environmental changes would produce relatively optimal performance in the long term so the company can be more sustained [52]. Additionally, Wong et al. [24] demand uncertainty negatively impacts a firm’s operational and financial performance and can disrupt sustainable performance because uncertainty in demand increases coordination and inter-organizational activities that may decrease operational performance and increase costs. External uncertainty negatively impacts SMEs' performance resulting in decreased SME performance among the three indicators inflation, competitor behavior, and natural disasters [25]. The findings of Thongrattana and Jie [53] showed that rising demand and unpredictable climatic conditions had a deleterious effect on long-term performance, resulting in a significant decline in rice milling efficiency. Increasing levels of demand uncertainty can drastically lower efficiency, which in turn disrupts the company's sustainable performance because demand uncertainty is a result of the complexity of sales networks within distribution systems [54]. Economic policy uncertainty, political instability, and the effect of climate change were negatively related to firms’ sustainability performance [23]. According to the findings presented by Bendickson et al. [55], it was indicated that company performance is adversely impacted by environmental uncertainty, the research highlights that dealing with fluctuations in the external environment, a consequence of environmental uncertainty, necessitates a substantial

allocation of company resources. Building upon the arguments presented above, the hypothesis was formulated as follows:

H2: Environmental uncertainty negatively impacts sustainable performance

2.5 Green culture and sustainable performance

The influence of stakeholders on organizational environmental strategies, as highlighted by Betts et al. [56] drives organizations towards constantly adjusting and optimizing their resources to stay competitive. This entails embracing green practices to enhance sustainable performance. Stakeholder pressure influences firms to adopt innovative green practices in producing goods and services [39, 57]. Additionally, Roespinoedji et al. [31] that companies that embrace a green organizational culture and create improvement in green innovation, lead to increased company performance which positively impacts company sustainability performance. In the manufacturing industry, green organizational culture has a positive impact on green competitive advantage and organizational performance which leads to cost savings through resource efficiency which positively impacts sustainable performance [29].

Green organizational culture positively impacts sustainable performance because green culture can support companies' employees to appreciate sustainable methods by generating the circumstances to shape, improve, and stimulate the employment of product and process innovation which can increase productivity and impact company sustainability [58]. Increasing the green orientation of an organization's culture can help the firm establish a more distinctive picture in the eyes of the public, so it can increase the competitive advantage and lead the company to sustain itself [30]. Green culture can drive green innovation strategies like green manufacturing, which when integrated into total quality management, enhances organizational performance by reducing harmful manufacturing practices which can positively impact sustainable performance by reducing waste and building efficient production proess [59]. Additionally, Baumgartner [60] suggests that by cultivating a green organizational culture, businesses can enhance the integration of environmental practices and consequently positively impact sustainable performance. Building upon the arguments presented above, the hypothesis was formulated as follows:

H3: Green culture positively impacts sustainable performance

2.6 Social media as the mediating role of corporate social responsibility on sustainable performance

Companies should focus on engagement and two-way conversations to maximize the potential for long-term relationships with stakeholders [61]. The organization can survive and sustain only by meeting the needs of the company's various stakeholders [62]. Firms can use social media to undertake CSR and explore the relationship between current customers and other stakeholders, thereby enhancing their reputation which can lead to a competitive advantage, so the company can have a good sustainable performance [35]. Interactive CSR communication enabled by social media can have positive effects on corporate reputation and brand through electronic word of mouth [63]. Additionally, Colleoni [64] found social media as an important communication tool to convey important CSR messages to engage various stakeholders.

The second advantage is significant because it relates to the fact that social media may improve CSR practices and associated sustainable performance [65]. For instance, Lee et al. [66] find that firms with excellent CSR performance are more likely to have early adaption, a greater number of followers, and more follower growth showing that socially responsible firms tend to engage in more proactive management to maintain relationships with their stakeholders. Interactive media usage may enhance the effectiveness of communication about CSR because users can easily spread the information to others [67]. Social media platforms, with their large audiences and inexpensive advertising costs, as well as the potential presented by customer word of mouth, may be an effective tool for businesses aiming to raise CSR awareness, it can increase customer engagement and profitability so a company can be more sustain [15, 16, 68]. Building upon the arguments presented above, the hypothesis was formulated as follows:

H4: Social media strengthens the relationship between corporate social responsibility and sustainable performance

2.7 Social media as the moderating role of environmental uncertainty on sustainable performance

Online social media can play an all-important role during crises and emergencies [69]. Many companies have utilized social media marketing to build and maintain the brand loyalty of their customers under market uncertainty [70]. Additionally, Chalmeta and Barqueros-Muñoz [71] said that supply chain management tools using social media may assist companies in better-managing risks via the continuous updating of real-time information, leading to earlier identification of problems and more suitable remedies in an ever-evolving business climate. Social media can also be used to study a company's sales predictions by integrating social media data, this improved forecasting capability can lead to reduced costs associated with excess inventory, greater consistency in delivery and production planning, particularly for high-demand products, which can reduce demand uncertainty [72]. Businesses can use social media to influence consumers' perceptions about product image and lead to consumption behaviors in uncertainty [73]. Building upon the arguments presented above, the hypothesis was formulated as follows:

H5: Social media strengthens the relationship between environmental uncertainty and sustainable performance

2.8 Social media as the mediating role of green culture on sustainable performance

Businesses that prioritize green are increasingly using social media to spread the word about their projects [74]. The fact that social media influences customers' intents and attitudes toward green products and contributes to the development of a green culture inside the organization [75, 76]. Additionally, Consumers are more likely to trust green brands through frequent and positive experiences published on social media so it can enhance company brand awareness and enhance sustainable performance [77]. Additionally, Sun and Wang [78] find that ads for green items on social media also contribute to a rise in product awareness. Users may be motivated to engage with environmentally conscious information on social media due to their strong desire to establish a green identity via their perception and the perception of others [79, 80]. Building upon the arguments

presented above, the hypothesis was formulated as follows:

H6: Social media strengthens the relationship between green culture and sustainable performance

3. RESEARCH METHODOLOGY

This research is quantitative research with primary data using a questionnaire. According to Joshi et al. [81], Likert's 6-point scale can help minimize deviations and mitigate risks associated with personal decision-making biases to obtain more detailed responses from respondents and lead to more reliable and valid data for analysis. This research employs a six-point Likert scale to assess the performance of diverse elements, ranging from "strongly disagree" as one to "strongly agree" as six. The research framework presented in this study is sustainable business performance as a dependent variable, while the independent variables include CSR, environmental uncertainty, and green culture. The moderating variable is the application of social media.

Variable sustainable performance adopted 9 items from Maletic [82], variable CSR adopted 10 items from Bai and Chang [11], variable environmental uncertainty adopted 3 items from Zhang et al. [12], variable green culture adopted 6 items from Andrian et al. [13], and variable social media adopted 9 items by Ali et al. [14]. To develop statement items for each variable in this research, the researcher engaged in discussions with sustainability experts and industry representatives across different organizational levels, including employees, managers, and directors from various sectors such as real estate, technology, and transportation. The primary aim was to comprehensively test and understand the reliability of the questionnaire items. This testing was also conducted to establish suitable indicators aligned with the local context of Indonesian content. As a result, various inputs were generated, including questions requiring further explanation within the variables of CSR and green culture.

The survey also obtained the respondents' general information, such as gender, age, education, company, sector of the company, profession, and duration of employment, in the questionnaire's first section. The survey's second to seven sections addressed the critical and influencing factors. The researcher directly contacted respondents via personal communication channels like WhatsApp, LinkedIn, and e-mail, as well as by sharing the questionnaire in the workplace, to build rapport and explain the purpose of the survey. Counting the number of samples using Hair et al. [83] minimum of 195 respondents, the researcher distributed an estimated 300-400 questionnaires, resulting in 196 responses—95 from public companies and 100 from private companies. The researcher distributed an estimated 300-400 questionnaires, resulting in 196 responses including 95 from public companies and 100 from private companies in Indonesia, eligible participants were required to possess at least a supervisor level. Validity and reliability testing serves to verify that research instruments effectively gauge intended constructs by affirming their capacity to measure as intended and yield consistent outcomes across diverse conditions and longitudinal analyses. Using SmartPLS helps to assess validity and reliability through structural equation modeling, while SPSS is used for descriptive statistics and t-tests to compare group means. This combination allows for comprehensive data analysis, ensuring the accuracy and consistency of the findings.

4. RESULT

4.1 Validity and reliability test

This research looked at the measuring model, convergent validity, and discriminant validity. The validity test examines the question items' validity by examining the average variance extracted (AVE) value, all variables used in this research match the standards since the AVE values for CSR, EUN, GCT, SMD, and SPF are larger than 0.5, indicating that all variables are pronounced valid by convergent validity [83]. After that, composite reliability values were used for the study's reliability testing. The study's measuring tools all met or surpassed the predicted Cronbach's alpha value of 0.60, according to the test findings [83]. According to these findings, the questionnaire will provide consistent, dependable, and useful variables.

4.2 Descriptive statistics

Table 1 displays the descriptive statistics findings for the top-scoring EUN variable. Values ranging from 2 (strongly disagree) to 6 (strongly agree) indicate different levels of agreement. With a mean value of 4.76, the EUN variable is in agreement with all indicators. In this variable, most respondents agree with indicator 2 with the highest average value being 4.70 which states product demand is unstable from time to time and cannot be predicted, which can be caused by changing trends, economic factors, and other factors. There is little variation in the EUN variable since its standard deviation is 0.94, which is less than the mean value.

Table 1. Statistic descriptive result

Variable	Max	Min	Mean	STDV
SPF	6	2	4.54	0.99
CSR	6	2	4.56	1.01
EUN	6	2	4.76	0.94
GCT	6	2	4.67	1.02
SMD	6	2	4.64	1.01

Source: Data Processed using SPSS

Note: Dependent Variable: Sustainable Performance (SPF), Independent Variable: Corporate Social responsibility (CSR), Environmental Uncertainty (EUN) Green Culture (GC), Moderating Variable: Social Media (SMD)

Then, SPF has a minimum value of 2 which means strongly disagree, and a maximum value of 6 which means strongly agree. The mean value of the SPF variable is 4.54, which means it agrees with all indicators. In this variable, most respondents agree with indicator 9 with the highest average value being 4.70 which means middle to top-level management has seen an increase in sales growth over the last 3 years. The lowest indicator is 2 with the lowest average value of 4.22 where middle to top-level management saw a decrease in waste ratios over the last 3 years. The standard deviation value of the SPF variable is 0.99 shows that SPF variable has a low deviation rate.

Then, CSR has a minimum value of 2 which means strongly disagree, and a maximum value of 6 which means strongly agree. The mean value of the CSR variable is 4.56, which means it agrees with all indicators. In this variable, most respondents agree with indicator 7 with the highest average value being 5.36 which middle to top level management agrees that customer satisfaction is important. The lowest indicator is 1 with the lowest average value of 4.22 where middle to top-level management contributes to implementing special

programs to reduce negative effects on the natural environment. There is little variation in the CSR variable since its standard deviation is 0.99, which is less than the mean value.

Then, GCT has a minimum value of 2 which means strongly disagree, and a maximum value of 6 which means strongly agree the indicators are all in agreement with the GCT variable's mean value of 4.67. In this variable, most respondents agree with indicator 3 with the highest average value of 4,74, which middle to top-level management sees that environmental preservation is a high-priority activity in every area. The lowest indicator is 1 with the lowest average value of 4.22 where middle to top-level management contributes to implementing special programs to reduce negative effects on the natural environment. With a standard deviation of just 1.02 and a mean value that is lower than that, the GCT variable exhibits a low rate of variability.

There is a range of possible values for SMD, with 2 indicating severe disagreement and 6 indicating strong agreement. All indications are supported by the mean value of the SMD variable, which is 4.64. In this variable, most respondents agree with indicator 4 with the highest average value being 4.91, which middle to top-level management sees that communicating corporate social responsibility activities, environmental issues, and green culture on social media leads to better communication, better company image, and better transparency. The lowest indicator is 8 with the lowest average value of 4.60 which states that middle to top-level management believes that people are more likely to prefer working for companies whose corporate social responsibility activities are communicated on social media. The standard deviation value of the SMD variable is 1.01, which is smaller than the mean value, so the SMD variable has a low deviation rate.

4.3 Sensitivity analysis

Table 2 shows regression test model 1 does not use moderation. Corporate social responsibility and green culture are dependent factors that have a beneficial effect on sustainable performance, according to the processing findings. Environmental uncertainty does not negatively affect sustainable performance.

Table 2. Sensitivity analysis result

Variables	Prediction	Samples	Model 1 (no Moderation) P-Value		Model 2 (with Moderation) P-Value	
			One Tailed	Two Tailed	One Tailed	Two Tailed
CSR	+	196	0.000*	0.000*	0.000*	0.000*
EUN	-	196	0.005*	0.001*	0.000*	0.000*
GCT	+	196	0.000*	0.000*	0.000*	0.000*
SMD*CSR	+	196			0.3505	0.701
SMD*EUN	+	196			0.000*	0.000*
SMD*GCT	+	196			0.0275	0.055
Adjusted r-square			0.522		0.527	

Source: Data processed with SPSS

Notes: p* < 0,05; Dependent Variable: Sustainable Performance (SPF), Independent Variable: Corporate Social responsibility (CSR), Environmental Uncertainty (EUN) Green Culture (GC), Moderating Variable: Social Media (SMD)

Then, the dependent variable may be described by the independent factors utilized in this research to the tune of 52.2% (adjusted r-squared = 0.522) while the remaining 48.0% can be accounted for by variables that were not part of this study. Subsequently, moderated regression model tests are the output of model 2 testing. Corporate social responsibility and green culture are dependent factors that have a beneficial effect on sustainable performance, according to the processing findings. Sustainable performance is unaffected by environmental unpredictability. The correlation between environmental uncertainty and sustainable performance can only be strengthened by using social media as a moderating element. Nevertheless, there is a small discrepancy with model 1. In this model, the adjusted r-squared value is 0.527 or 52.7%, indicating that the independent variables in this study adequately explain the dependent variable. The remaining 47.3% is accounted for by variables that were not included in this study. CSR positively impacts SPF because the establishment of robust stakeholder engagement that makes inclined towards purchasing shares by investors, serves as a pivotal mechanism enabling the enduring sustainability of the company. This is evident from descriptive statistics, which show that companies agree that management at all levels, from middle to senior, emphasizes the importance of social responsibility and considers customer satisfaction as crucial. Based on the descriptive statistics, respondents strongly agree that there are rapid changes in terms of consumers, products, and competition but EUN does not always negatively affect SPF, which can be caused by firms exerting efforts to reduce demand uncertainty with market research for products, targeted consumer surveys, and better demand forecasting [84]. GCT can positively affect SPF because embracing a green culture encourages innovation and creativity. In line with the respondents' views that middle to top management sees environmental preservation, environmental awareness, and environmental conservation as important. By Embracing green culture businesses can save money on materials, energy, and water while also differentiating themselves via better product design and quality made possible by green innovation which is also stated by Gürlek and Tuna [85]. SMD does not always strengthen the relationship between CSR and SPF, because a lack of enthusiasm in interacting with stakeholders, such as cultivating emotional backing via online social platforms, results decline in corporate reputation [86]. Instead, SMD can strengthen the relationship between EUN and SPF because claims that supply chain management apps that include social media may help companies better handle risks by providing up-to-the-minute information that can lead to earlier detection of problems and better remedies in a dynamic business climate [72]. The result also indicates that SMD does not strengthen the relationship between GCT and SPF, this can happen because customers also consider product quality, which consumers often have negative associations with the choice of sustainable products, viewing these products as having lower quality, less aesthetic, and more expensive.

5. CONCLUSIONS

CSR, EUN, and GCT create a substantial positive influence on firms' SPF. This study explored how social media applications moderated the relationship between CSR, EUN, and GCT on firms' SPF, which resulted in SMD only strengthening the relationship between EUN and SPF. From the results of this research, several forces can be applied by company management, including in the field of CSR, companies must continue to allocate resources and attention to ensure that customer satisfaction is the main focus in all decisions and business activities.

In terms of green culture, companies must continue to integrate environmental values into their business strategy. This can be done with initiatives and decisions that support environmental sustainability, such as reducing carbon footprints, optimizing resource use, and adopting green business practices. Companies need to carry out in-depth evaluations of social media usage strategies related to CSR and green culture. This includes reviewing the platforms used, the content marketed, and how the audience interacts. Companies need to convey consistent messages about their commitment to CSR and GCT across all their social media platforms. Consistent and clear messages will help build consumer trust and loyalty. Companies need to be responsive to environmental changes that may affect their well-being. Through social media, companies can quickly convey information about the steps they are taking to respond to change and how this may affect consumers and society. Through sustainable business practices, companies can support economic growth by producing innovative products and services, also promoting financial inclusion which can contribute to achieving SDG 8.

There are some limitations in this research. First, there is respondent subjectivity when answering questions on the questionnaire. Additionally, additional factors that were not included in this study may account for the remaining 47.3% of the variance, as the corrected r-squared value is just 0.527, or 52.7%. Thirdly, there were only 196 respondents to the cross-sectional survey of Indonesian public and private firms that provided the data for this study. The research recommends that future research can use interviews along with mixed research methods to gain a better understanding by triangulating quantitative and qualitative data and exploring participant or qualitative views for analysis based on large samples. Then, future research can add other research variables that may influence survival such as social norms, market orientation, and dynamic capabilities. Acknowledging that businesses operate within intricate socio-economic landscapes, it is evident that factors such as social norms and market orientation are assumed to have an impact on sustainable performance. Future research should increase the number of respondents by expanding the sample in Indonesia and countries such as ASEAN so that the research results can be generalized and compared.

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