Sustainability Targets in Executive Remuneration Contracts and Corporate Sustainability Performance in the UK and European Union

Abstract

This study investigates the impact of the integration of sustainability criteria in executive remuneration on corporate sustainability performance (CSP). The paper tests the pooled OLS models on a cross-country sample comprising 279 firms from 19 European Union (EU) countries and the United Kingdom (UK) under the period from 2014 to 2018. The results suggest that there is a significant positive impact of sustainability-related executive remuneration on CSP. Furthermore, there is no significant statistical evidence for the moderating impact of the sustainability committee on the relationship between sustainability-related contracting and CSP. Moreover, the results reveal that the moderating effects of official CSR disclosure and external assurance for sustainability reports are significantly negative. We suggest that regulators and practitioners promote the integration of sustainability targets in executive remuneration to improve CSP and review the quality of sustainability reporting systems.

Keywords:

Sustainability-related executive remuneration, sustainability committee, sustainability report, external assurance, corporate sustainability performance

1. Introduction

World Meteorological Organization (WMO) published the State of the Global Climate report 2022 right before the 27th Conference of the Parties to the United Nations Framework Convention on Climate Change – COP27. The report highlights that the past eight years showed the highest average temperature on record, with greenhouse gas concentrations at record highs in 2021. The global average temperature in 2022 is 1.15 ± 0.13^{o}C above the pre-industrial (1850-1900) average. This problem results in several severe natural disasters such as extreme weather in East Africa; wildfires in Amazon, Australia, California, et cetera; rising sea level caused by melting ice caps threatening the existence of islands; accelerating warming rates of the ocean or the alarming ecological loss rate. All of these have threatened the goal of achieving 17 Sustainable Development Goals (SDGs) set by the UN by 2030. Therefore, in 2021, almost 200 countries participating in COP26 held in Glasgow - United Kingdom, agreed upon the Glasgow Climate Pact to accelerate their action to tackle climate change. Based on the outcomes of COP26, the COP27 in Sharm el-Sheikh - Egypt is expected to deliver action on an array of issues critical to addressing the climate emergency – from urgently reducing greenhouse gas emissions, building resilience, and adapting to the inevitable impacts of climate change, to delivering the commitments to finance climate action in developing countries. In addition to actions to address climate change, the United Nations also engages in activities to raise awareness and promote other environmental concerns regarding ocean/ocean life, water; and social concerns of children's well-being, gender equality, ending poverty, human rights, peace, securities, and public health (United Nations, n.d).

With this vision and plans of the regulators, the earlier firms take action to engage in corporate social responsibility (CSR), the more advantages firms could gain and the more unexpected legitimate operation risks they can avoid. If firms can secure their profitability while still meeting or even exceeding social expectation regarding social performance, they can gain invaluable competitive advantages (Martinuzzi and Krumay, 2013; Vilanova, Lozano and Arenas, 2009). Otherwise, firms can put themselves at tremendous risks, especially reputational risk (Carlisle and Faulkner, 2005; Zyglidopoulos, 2002). In addition to these forces, the direct forces from the growing demand of shareholders for CSR (Michelon and Rodrigue, 2015) and the concern of investors for the triple bottom line of economic, social and environmental performance (Obermann and Velte, 2018) are solid drives for companies to seek to improve their corporate sustainability performance (CSP).

In response to these forces, CSR has been considered by firms as a component of corporate strategy, and companies are intensively seeking ways to enhance their CSR practices (Becchetti, Ciciretti, Hasan and Kobeissi, 2012). Certainly, among the corporate governance mechanisms expected to improve CSP, the integration of CSR targets in executive remuneration is a promising tool. There are calls for this practice to be extended across all companies (Burchman and Sullivan, 2017). This practice is employed by an increasing number of firms (Flammer, Hong and Minor, 2019) to formally put CSR on the executive agenda (Coombs and Gilley, 2005). In 2012, the United Nations Principles for Responsible Investment published guidance on integrating environmental, social and governance issues in executive remuneration (PRI, 2012). In 2013, a survey from EY showed that 30 per cent of executives at large-cap companies said that the company received requests for incorporating sustainability targets in executive

compensation. In practice, the Ceres organization conducted a study in 2014 and reported that 24 per cent of large-cap firms linked executive compensation with sustainability matrix. Recently, a study in 2019 by CDP indicates that 47 per cent of Europe's most prominent firms linked executive pay to climate change, and the vast majority of the top 500 largest corporations incorporated some green targets in their executives' compensation (Haque and Ntim, 2020). These figures show that the trend of linking executive remuneration to sustainability targets is growing tremendously.

This study is conducted in response to the situation that the role of CSR has experienced a remarkable acceleration in recent years due to alarming global environmental and social issues. The primary purpose of this paper is to assess the effectiveness of the integration of CSR targets in executive remuneration schemes (CSR contracting) on CSP in the context of the European Union (EU) and the United Kingdom (UK). In addition to this, this study examines the effects of CSR contracting on CSP with the moderating effects of several corporate governance mechanisms, which are (1) the existence of sustainability committee, (2) official CSR disclosure, (3) the use of external assurance service for sustainability reports of the firm. The research is conducted under *agency theory*, *expectancy theory* and *reinforcement theory*.

Despite the growing popularity of the practice, literature has shown a severe lack of empirical evidence to test the impact of CSR targets in executive remuneration on firms' sustainability performance in the context of other economic areas outside the U.S, especially for the EU and the UK, given their crucial leading roles in the global economy. To fill this research gap, the research aims to provide empirical evidence for the effectiveness of CSR targets in executive remuneration using the sample from the EU and the UK. In addition, the research also studies the moderating effects of three corporate governance practices (i.e. the existence of CSR committee, official CSR disclosure and the employment of external audit for sustainability reports) on the CSR contracting – CSP relationship. We employ a cross-country data set covering 279 companies in 19 EU countries and the UK. The five main objectives of this research are: (1) providing a theoretical framework for the inclusion of CSR targets in executive remuneration; (2) investigating the impacts of integration of CSR targets in executive remuneration on CSP to confirm the effectiveness of the practice in the EU and the UK; (3) examining the impacts of the practice on CSP with moderating effect of the existence of CSR committee; (4) examining the impacts of the practice on CSP with moderating effect of official CSR disclosure and (5) examining the impacts of the practice on CSP with moderating effect of the employment of external audit for sustainability reports.

Since studies on this topic are still rare, this study can contribute to the literature in various ways. Firstly, the research fills in the lack of empirical evidence on the topic of sustainability-related executive remuneration for the EU and UK markets. Although the integration of sustainability targets in executive remuneration is gaining in popularity, the effectiveness of the practice has been somehow perceived by the majority of practitioners with very little empirical evidence about it (Maas, 2018). This perception might stem from the notion that payment incentives can drive managers' perception, attention, and efforts towards sustainability management (Goktan, 2014) and that incentive payments can be applied in any performance-based system with embedded sustainability targets (Merriman and Sen, 2012). Most papers on this topic do not directly investigate the relationship between CSR criteria in executive

remuneration and CSP. Only five studies have directly addressed the association between CSR contracting and CSP. These studies are from Emerton and Jones, 2019; Flammer et al., 2019; Ikram, Li and Minor, 2019; Maas, 2018; Russo and Harrison, 2005. Among those studies, three out of five are based on S&P 500 data, and one studies solely on U.S electronics plants. Furthermore, only one research paper from Emerton and Jones (2019) is being conducted in the context of the United Kingdom with results drawn from interviews with nine individuals involved in the executive remuneration setting process. Therefore, it is anticipated that the results from my research can contribute to the growing literature about CSR criteria in executive payment with cross-country sample from the EU and the UK companies.

Secondly, this research extends the concern beyond the sole integration of CSR targets in executive remuneration by considering the moderating impacts of several additional CSR governance practices, which are (1) the existence of CSR committee, (2) official CSR disclosure and (3) the external assurance for the sustainability reports. For all the five studies about the effects of CSR targets in executive remuneration on CSP aforementioned, the shared approach is to study solely the integration of CSR targets in executive remuneration with some firm-level variables as control variables. However, it is undeniable that the results of CSP come from collective actions and governance mechanisms of the firms (García-Sánchez, 2020). Therefore, this research takes account of the moderating effects of these three factors to test if these mechanisms support the effectiveness of CSR contracting in improving CSP.

Thirdly, country-level control variables are included in this research apart from the common firm-level control variables. The country-level control variables included are the Human Development Index (HDI) and Environmental Performance Index (EPI). HDI is an index issued by the United Nations Development Programme and supports human's long and healthy life, improvement of knowledge and access to resources required for a decent standard of living (Spangenberg, 2016). To turn to EPI, it is one of the most popular indices. It is published with the collaboration of Yale Center for Environmental Law & Policy (YCELP) and the Center for International Earth Science Information Network (CIESIN) at Columbia University, in collaboration with the Samuel Family Foundation and the World Economic Forum (Almeida and García-Sánchez, 2016). However, none of the studies on the impacts of executive remuneration or CSR contracting on CSP has controlled for country-level sustainability performance. This research argues that country-level sustainability performance could affect firms' CSR performance by enabling proactive environmental strategies with external drivers of government regulations, incentives and customer pressures (Zailani, Eltayeb, Hsu and Tan, 2012). In several studies, country-level or institutional sustainability performance or regulatory environment have been proven to impose influence on firms' ability to capture the benefits of CSR (Xiao, Wang, Vaart and Donk, 2018) or firms' ethical behavior (Ullah, Ahmad, Akbar and Kodwani, 2019).

Last but not least, this research is the first that attempts to construct a conceptual framework for the integration of sustainability targets in executive remuneration by using multiple theories, namely, *agency theory*, *expectancy theory* and *reinforcement theory*. While the *agency theory* (Hill and Jones, 1992), *expectancy theory* (Lawler, 1971; Vroom, 1964) and *reinforcement theory* (Skinner, 1969) are used to explain managerial behavior towards financial incentives of remuneration schemes; *reinforcement theory* and *expectancy theory* contribute to the development of hypotheses regarding moderating effects of three corporate governance practices on the CSR contracting - CSP relationship. These corporate governance practices include (1) the existence of CSR committee, (2) official CSR disclosure and (3) the external

assurance for sustainability reports. In contrast, extant literature mainly investigates this relationship under separate theories. Ikram et al. (2019) summarized several literature strands to determine why firms employ CSR-contingent contracts. Several theories were mentioned, such as institutional theory and stakeholder theory, to set the ground for integrating CSR criteria in executive remuneration scheme. However, Ikram et al. (2019) only investigated these theories as separate views. In this research, we develop a theoretical framework simultaneously infused by three theories. In addition, based on the institutional and stakeholder theories, Ikram et al. (2019) only pointed out the motivations of firms in pursuing CSR while not offering the theoretical framework to explain why CSR-contingent contracts can force executives to pay attention to sustainable development. In particular, the institutional theory argues that firms engage in actions that enable them to secure their social legitimacy (Bansal, 2005). Regarding stakeholder theory, it is insisted that executives act as agents for all stakeholders, including shareholders, customers, suppliers, employees, and more (Ikram et al., 2019). In this case, the authors perceived the effectiveness of CSR contracting. In our research, we contribute the theoretical framework to set the ground for how CSR contracting can affect executives' behavior towards CSP and offer empirical evidence to test this relationship.
Regulators can refer to these results to consider modifying the extant corporate governance codes and develop best practices guidance for companies to improve CSP. In addition, this might also be of interest to the Boards of Directors (BoDs) in the remuneration-setting process.

The rest of the paper is structured as follows. The second section is background information about the context of CSR practice in the EU and the UK and the current trend of CSR contracting in the region. The third section discusses the theoretical framework to explain how CSR contracting works. The fourth section reviews empirical findings related to the research and develops hypotheses. The fifth section is about the sample, data and research design. The sixth section presents empirical findings, discussion of the results and robustness test; whilst the final section concludes.

2. Background

According to statistics published by the WMO in November 2022, temperatures in Europe have risen more than twice that of the global average over the last 30 years. Each decade witnessed an increase of approximately +0.5^{o}C in Europe. This state has led to catastrophic climate events such as wildfires, floods, ocean heatwaves, et cetera. Only in 2021, these climate events caused hundreds of fatalities, adversely affected more than half a million people, and caused economic damages of over USD 50 billion. Meanwhile, Europe is also one of the leading regions in international cooperation for managing climate change and other societal issues. "The European Green Deal" was presented in December 2019, which has paved the way for a new development strategy for European countries. With this agreement, the EU promises to take the lead in using its influence, expertise, and financial resources to support international efforts to tackle climate change and environmental issues and improve people's quality of life. It is emphasized that these goals could only be achieved by starting an evolution in the economic models covering all industries. Regarding the UK, despite its withdrawal from the EU, in terms of climate change, the UK is aligned with the EU (The Guardian, 2020). The European Commission officially published the European Climate Law as a part of the European Green Deal on 9th July 2021. This law was enacted on 29th July 2021 and wrote into law the goal set out in the European

Green Deal for Europe's economy and society to become climate-neutral by 2050. Climate neutrality means that by reducing emissions, investing in green technologies, and protecting the natural environment, EU countries will achieve net zero greenhouse gas emissions by 2050. In the short term, the EU has also set a target for 2030 of cutting greenhouse gas emissions by at least 55% compared with 1990 levels. To achieve this ambitious goal, all sectors of the economy and society must participate in the actions to achieve these goals. Initiatives were set out in the European Climate Law to integrate corporate sustainability practices into the green transition agenda (Haque and Ntim, 2022).

In this context, there is a strong momentum for firms to engage in CSR. Bansal and Roth (2000) summarized three main motivations for firms to undertake CSR: competitiveness, legitimation and ecological responsibility. Firstly, CSR is perceived to be crucial because it is recognized that CSR offers firms the potential to gain competitive advantage (Porter and Kramer, 2006) by enhancing their reputation, lowering costs, differentiation, et cetera (Cetindamar and Husoy, 2007; Lantos, 1999). Secondly, the other reason making firms engage in CSR is to secure firms' legal operation and to protect them against reputational risk by maintaining their compliance with sustainability regulations (Bansal and Roth, 2000). In practice, CSR has a voluntary nature (Steurer, Margula and Martinuzzi, 2012). However, the government is an influential stakeholder group that can set the minimum legal standards (Steurer, 2010). In the EU, CSR activities are promoted through a range of soft public policies (Steurer et al., 2012). European authorities foster CSR practice by raising awareness about CSR and building the capacity to implement CSR activities of firms. These are developed through education activities about CSR; government-sponsored guidelines; CSR awareness-raising campaigns; giving economic incentives such as favorable loans, grants, et cetera. For example, Germany incorporates CSR guidelines in the German Corporate Governance Code, or Austria has the Austrian CSR Guiding Vision. In addition, the overall requirement of CSR from external stakeholders and internal stakeholders would be a powerful force driving firms towards sustainability. Recently, PwC published a survey regarding CSR practices and reported that 92% of the companies surveyed were aware of SDGs, and 72% had already taken action. Moreover, 78% of citizens stated that they were more likely to buy the goods and services of companies that followed SDGs. Internally, employees are also looking for firms with sustainable business practices. According to the study of CONE in 2016, 51% of respondents said they would not work for a company that does not strongly engage in social and environmental commitments. Last but not least, the moral reason is another reason that motivates firms to conduct responsible activities to contribute to mitigating or solving environmental and social issues (Graafland and van de Ven, 2006).

For the importance of CSR, it is highly recommended that one of the best ways to take CSR into account is to reward sustainability targets (UN PRI, 2012). According to a report by PRI (Principles for Responsible Investment) and United Nations Global Compact LEAD, examples of environmental performance targets could be "biodiversity loss, greenhouse gas (GHG) emissions, climate change impacts, renewable energy, energy efficiency, resource depletion, chemical pollution, waste management, depletion of fresh water, ocean acidification, stratospheric ozone depletion, changes in land use, and nitrogen and phosphorus cycles". In the same report, they gave examples of social elements as "activities in conflict zones, distribution of fair trade products, health and access to medicine, workplace health safety and quality,

HIV/AIDS, labour standards in the supply chain, child labour, slavery, relations with local communities, human capital management, employee relations, diversity, controversial weapons, and freedom of association".

With the global advocacy of CSR, integration of sustainability targets into executive remuneration scheme is perceived to be an effective tool to motivate managerial engagement in CSR. This practice is highlighted through guidance about the appropriate integration of CSR targets in executive pay. In 2012, UN Global Compact and Principles for Responsible Investment composed guidance on best practices on how to construct suitable ESG (Environment – Social – Governance) metrics, how to link these metrics to executive remuneration, and how to disclose the practice. Besides that, in 2010, World Business Council for Sustainable Development (WBCSD) also published guidance on this topic based on a list of case studies. In the same year, the Dutch Association of Investors for Sustainable Development (VBDO) and DHV en Hay Group with the support of the Dutch Ministry of Economic Affairs issued detailed guidance on how to build a sustainability-related remuneration scheme. In this guidance, VBDO called companies to link at least one-third of the bonus to sustainability targets and gave a detailed illustration of the process.

Since the beginning of the century, corporate leaders have highly embraced the inclusion of sustainability targets in executive remuneration. For example, Lockwood (2004) noted that 50 per cent of global managers report that their companies include and plan to include citizenship responsibility as a performance evaluation category and 68 per cent of respondents agree that the link between citizenship responsibility and performance appraisal is "increasingly important". Recently, Lacy, Cooper, Hayward and Neuberger (2010) did a global survey with nearly 800 CEOs. Most believe that incorporating sustainability targets into remuneration plans is one of the most effective tools to achieve more active engagement in corporate sustainability impacts.

In practice, in a report by Eurosif and EIRIS in 2010, 29 per cent of the top 300 largest European companies by market capitalization showed some commitment to link executive pay to ESG performance. Moreover, according to Hostettler & Company, European companies using CSR contracting increased from 38 per cent in 2012 to 50 per cent in 2016. Furthermore, ESG criteria appeared in 77 per cent of short-term incentive plans and about 23 per cent of long-term incentive plans. Recently, CDP Global (2019) published their collected data and announced that 47 per cent of Europe's largest firms, which accounted for three-quarters of the European market cap, rewarded their managers for management of climate issues, and one in four links incentives to climate targets.

3. Theoretical framework

3.1. Remuneration scheme as an incentivized tool

The importance of top executive pay structuring has been emphasized in numerous pieces of literature (Core, Guay and Larcker, 2003; Tyson and Bournois, 2005). It has been at the center of corporate governance and management of conflicts of interest (Ferrarini and Moloney, 2005). The executive payment setting procedure is one of the essential parts of corporate governance

guidelines in all countries. Due to the agency problems which are caused by the separation of ownership and management, if we consider both the agents (managers) and the principals (shareholders) are rational and are keen on maximizing their own interests, the agents might not always act for the best interests of the principals to make the optimal decision to maximize principals' benefits (Jensen and Meckling, 1976). This behavior might cause shareholders' welfare to be lower than it could be. To address this issue, extensive literature has been devoted to studying how executive compensation should be structured to align the interests of the principals and agents as well as give the agents appropriate motivation to take actions to maximize shareholders' wealth (Bruce, Buck and Main, 2005; Jensen and Meckling, 1976). Researchers have also argued that the extent managers pursue the shareholders' agenda will depend on how they are incentivized (Ferrarini and Moloney, 2005). According to Hill and Jones (1992), in agency theory, the principal can mitigate the conflicts of interest by establishing appropriate incentives for the agents. From this view, performance-based remuneration has been popularly used as a tool to motivate managers to achieve results expected by the shareholders (Lee, 2009). Performance-based payment could be categorized into merit payment and incentive payment (Boachie-Mensah and Dogbe, 2011). While merit payment depends on the assessment of upper levels about the performance of the assessed level and links the level of payment to that assessment, incentive payment links remuneration to performance criteria, such as sales, return on investment, share price, et cetera. Financial incentives, such as equity and bonuses, embedded in executive compensation are most commonly used to encourage the agents to pursue principals' interests and direct the organization towards mutual goals (Connelly and Slater, 2011).

Regarding the behavioral reason behind how performance-based remuneration motivates managers' performance, Perry, Engbers and Jun (2009) proposed that performance-based payment is formed from two theories, namely, *expectancy theory* and *reinforcement theory*. The expectancy theory studied by, for example, Vroom (1964), Lawler (1971), predicts that individuals will put effort into the tasks that they believe to bring the outcomes that they value (Boachie-Mensah and Dogbe, 2011). Therefore, in the scenario of executive payment, managers would have the motivation to work harder to achieve the results that would give them monetary rewards. Therefore, in remuneration package of managers, financial or non-financial targets can be tied with the financial rewards to drive managers' attention and efforts towards the desired results. Moreover, the *expectancy theory* also argues that the efforts of individuals would depend on his/her expectation for the possibility of success (Bender, 2007). In other words, individuals must feel confident that by following the actions directed by the remuneration systems and with available resources, they can achieve their goals and get awards.

Regarding the *reinforcement theory* (Skinner, 1969), it proposes that specific stimuli can be used to produce desired behaviors and results. The popular technique to apply reinforcement theory is positive reinforcement by introducing rewards and incentives to promote certain behaviors tied to the rewards (Wei and Yazdanifard, 2014). On the other hand, punishments are used to limit unwanted behaviors (Wei and Yazdanifard, 2014). In terms of using remuneration as an incentivized tool, payment is used as an extrinsic reward (i.e. positive reinforcement) to reinforce wanted behaviors that contribute to achieving desired results. In the case of executive remuneration, payment can be used to guide managerial behaviors and decisions, which can lead to the accomplishment of specific results. In particular, achieving higher performance and

accomplishing the targets set to get the pay would reinforce behaviors and decisions of managers.

However, it has been argued aggressively recently that focusing solely on financial targets can be detrimental to the companies because managers might engage in fraudulent activities and manipulation of accounting figures to achieve the financial targets (Frey and Osterloh, 2005). In addition, the extensive focus on only economic performance might lead to short-termism and make managers engage in activities that are undesirable to the company in the long term and to other stakeholders (Bender and Moir, 2006). Therefore, there has been growing recommendation to incorporate non-financial measures in addition to traditional financial measures in remuneration scheme (Dossi and Patelli, 2010). The inclusion of non-financial indicators in the performance assessment of managers would bring managers' attention to a balance (Kaplan and Norton, 1992). Besides the non-financial measures that are directly related to business activities of firms such as customers' satisfaction, innovation targets, learning and development targets, et cetera, in response to the rising attention for CSR, integration of sustainability-related criteria in performance-based remuneration scheme is a new emerging trend in business practice and has attracted significant interest from academic researchers (Emerton and Jones, 2019).

In summary, *agency theory*, *expectancy theory* and *reinforcement theory* can set the ground for the expectation that by linking CSR targets to executive remuneration rewards, we can direct managerial attention towards sustainable development goals, which, in turn, can improve CSP.

3.2. Corporate governance practices as mediators of CSR contracting – CSP relationship

In light of *expectancy theory* and *reinforcement theory*, this research proposes that the relationship between CSR contracting and CSP is moderated by several corporate governance practices, namely, (1) the existence of CSR committee, (2) official CSR disclosure and (3) the external assurance for sustainability reports.

The moderating effect of the existence of CSR committee on the CSR contracting – CSP relationship is investigated under the light of *expectancy theory*. As mentioned above, the expectancy theory says that if individuals feel more confident about the possibility of success, they will put more effort into the work. In this case, we expect that with the support and knowledge of CSR committee members who can bring more necessary resources to accomplish the CSR goals, managers would be more confident in the feasibility of the pursuit of CSR plans. This belief would encourage managers to engage more in CSR targets set because they expect a high possibility of accomplishing these targets. Therefore, the existence of CSR committee is expected to positively moderate the CSR contracting – CSP relationship.

Reinforcement theory and *expectancy theory* are the ground for the consideration of official disclosure of CSR performance as moderator variable. Firstly, under the light of *reinforcement theory*, if the firm separately discloses CSR performance, the managers will feel that their efforts are recognized, and they can gain reputation. This acknowledgement of the manager can be considered as a type of intrinsic reward (i.e. praise, delegation, empowerment or acknowledgement) (Wei and Yazdanifard, 2014). This way, managers might be more motivated

to pursue CSR targets, which can positively moderate the relationship between CSR contracting and CSP. Secondly, according to *expectancy theory*, managers will put more efforts in actions which lead to the achievement of the targets if they believe that there is high possibility of success. In this case, with CSR information available, executives will trust more in the feasibility of the success of the CSR plans and take stronger actions. This determination of executives might be a boost to CSP of firms. Therefore, official CSR disclosure is expected to positively moderate the CSR contracting – CSP relationship.

Reinforcement theory is the theoretical base for the consideration of external audit of CSR reports as moderating variable. It is proposed that the employment of an external audit for CSR reports could reinforce a more substantive approach towards CSR because the manager acknowledges that the results of the sustainability reports would be audited. This can act as a factor to minimize the possibility of doing CSR activities in a superficial manner and force managers to take actual actions towards CSR. Therefore, the employment of an external audit for CSR reports is proposed to moderate the CSR contracting - CSP relationship positively.

4. Literature review and hypothesis development

CSR contracting and CSP

Among the studies about executive pay and firms' sustainability performance, the most popular interest is placed on the impacts of executive remuneration on CSP, while fewer studies are about the mediating effects of sustainability criteria on the relationship between executive remuneration and CSP. Regarding the topic of the impacts of integration of CSR targets in executive remuneration on CSP, there are only a scarce number of studies.

Literature has shown contradictory results regarding the relationship between executive payment and CSP. Some studies claimed a negative relationship between executive compensation and environmental reputation/social performance (Coombs and Gilley, 2005; Stanwick and Stanwick, 2001). These results might come from the apparent fact that engagement in social and environmental issues is financially and managerially expensive (Jawahar & McLaughlin, 2001) and can reduce firms' income. Consequently, a lower financial performance can lead to a reduction in executive pay. Other studies argued that CSP should not be viewed on a single continuum. In their research, McGuire et al. (2003) found no significant relationship between strong social performance (the willingness to surpass the standard expected social performance), while salary and long-term incentives showed a positive relationship with weak social performance (irresponsible or risky behavior). Other studies showed a positive relationship between executive salary and weak social performance (Callan and Thomas, 2011; Mahoney and Thorne, 2005); and between bonuses, stock options and strong social performance (Mahoney and Thorne, 2005; 2006).

Other studies expanded the investigation and consider CSR targets in executive remuneration as a moderating factor in the relationship between executive compensation and CSP. Cordeiro and Sarkis (2008) found that only firms that explicitly link CSP to executive compensation showed the noticeable impact of environmental performance on managerial compensation. On the contrary, Berrone and Gomez-Mejla (2009) proved from their empirical evidence that a noticeable pay policy did not make firms reward their executives for social performance. This

might indicate that the integration of CSR targets in executive remuneration is not based on substance but just an act of signalling concern over environmental issues. Similarly, Kolk and Perego (2014) analyzed four business cases from the Netherlands and casted doubt on the sustainability bonuses' credibility. They could not conclude if this practice shows firms' engagement in CSR or is an act of "window dressing" to signal sustainable behavior and keep up bonus level. In another dimension, Eccles et al. (2014) observed that high-sustainability firms were more likely to have sustainability criteria in top management remuneration. Haque and Ntim (2020) ascertained that CSP-based sustainable compensation policy positively moderated the positive effect of executive commission on carbon performance of firms. However, despite being interested in the use of CSR targets, none of the above studies investigated the direct effects of the integration of sustainability targets in executive pay on CSP.

Recently, there has been a growing interest in studies about CSR targets in executive remuneration, its popularity and its impacts on CSP. There are several descriptive studies, in addition to market data reports from organizations and companies, that studied the prevalence of the practice in a specific country or on a cross-country scope (Deegan and Islam, 2012; Maas and Rosendaal, 2016; Flammer et al., 2019). These studies revealed a growing trend of inclusion of CSR targets in executive remuneration. For example, Deegan and Islam (2012) analysed ten large carbon-intensive companies in Australia and discovered that eight used occupational, health and safety (OHS) in their executive remuneration metrics. On a larger scale, Maas and Rosendaal (2016) used a sample of 490 listed firms across 11 countries to investigate and found that 33 per cent use sustainability targets. This practice is prevalent in "dirty" industries such as utility and energy firms. However, statistics about the practice are still rare. These descriptive studies only reveal the prevalence of the practice with the perceived agreement that this is a good practice that should be adopted if firms are concerned about CSR.

Regarding studies that directly addressed the association between the integration of CSR targets in executive remuneration and CSP, there are a limited number of studies from Emerton and Jones (2019); Ikram et al. (2019); Flammer et al. (2019); Maas (2018) and Russo and Harrison (2005). The study of Russo and Harrison (2005) used a sample of US electricity companies and plants and found a weak positive impact of sustainability-related compensation on the environmental result, which, in this case, was the reduction of emissions. However, this association was only valid for one of the two lines of managers under study, which might be because the other lines of managers (quality managers) had already done their best to minimize emissions. Maas (2018) recently contributed some further insights into the literature by studying a sample of 400 S&P 500 companies from 2008 to 2012. In contrast to the claim of Eccles et al. (2014) mentioned above, Maas (2018) found no evidence for the link between the level of CSP and the use of CSR targets. Although the empirical result showed that the inclusion of general CSR targets in executive remuneration did not automatically guarantee higher CSP, quantitative and hard CSR targets effectively improve CSP results, especially for weak CSP. The contribution of this research is that it clearly distinguished between qualitative, soft CSR targets and quantitative, hard CSR targets, which can be a critical consideration for firms when designing the assessment metric. The research by Flammer et al. (2019) covering all S&P 500 companies over a ten-year period from 2004 to 2013 found strong support for CSR contracting. In this research, they found that CSR contracting not only led to more long-term orientation of

firms and increased firm value, but this practice also resulted in higher CSR, increasing green innovation and reduced emissions. More importantly, a point that can be referred to when setting executive remuneration is that the higher the proportion of CSR-based compensation, the more effective CSR contracting is when it is substantive. In the research of Ikram et al. (2019), they found out that CSR contracts were effective in enhancing social standing, indicated by the future CSR rating of firms. Differently, Emerton and Jones (2019) approached the topic from an inductive approach through interviews with nine participants from listed UK companies who are involved in the remuneration setting process. This study assessed the effectiveness of sustainability-related executive compensation through the participants' perceptions. From the summary of the study, they proposed two hypotheses. Firstly, the integration of sustainability criteria in executive pay is still dependent on the ability of the firm to generate profit in the short term and the complexity of establishing such metrics. Secondly, the integration of CSR targets in executive remuneration does not improve companies' CSR measures, but external forces such as government regulations do.

Generally, studies about the impacts of the integration of sustainability targets on CSP gave contradictory results. Some studies failed to prove the practice's effectiveness and doubted the substance of CSR contracting, whether it is just a tool for firms to signal CSR concern to meet moral expectations and respond to pressures from investors and communities (Kolk and Perego, 2014). On the other hand, other studies found some supporting evidence that using CSR targets in executive remuneration can shift managerial attention towards the interests of more salient stakeholders, such as environment or local communities, which leads to improved CSR performance (Russo and Harrison, 2005). However, in combination with the theoretical framework discussed in *Section 3.1*, we propose that integration of CSR targets in executive remuneration has a positive impact on CSP.

Hypothesis 1 (H1): *The integration of sustainability targets in executive remuneration has a positive impact on corporate sustainability performance.*

Secondly, as mentioned previously, this study will investigate the moderating effects of three corporate governance mechanisms of (1) the existence of CSR committee, (2) official CSR disclosure and (3) the employment of external audit for sustainability reports.

CSR committee as moderator on the CSR contracting-CSP relationship

Regarding CSR committees, in literature, the crucial roles of BoD in management of CSR have been emphasized (Elkington, 2006). Since 1989, Zahra and Pearce (1989) already summarized that “boards can be the most influential role in enhancing corporate social responsibility performance”. It is because BoD is the one that can shape the strategic goals, missions and directions of the whole firm. With this power, they can decide the organization's core values and integrate them into their strategic plans. With the complexity of current CSR management, it is highly recommended that sub-committees should be established for better board function by having fewer decision-makers governing the tasks (Spira and Bender, 2004). As a sub-committee of BoD, the CSR committee plays the “direction-setting role” in CSR performance (Eberhardt-Toth, 2017). Moreover, CSR committee members contribute their experience and knowledge in the field, guarantee the appropriate function of sustainability information and

CSR control systems, and provide supervision for the CSR report (Fuente, García-Sanchez and Lozano, 2017). With this strategic guidance and support, CSR plans of the company would have a higher probability of success, thus, leading to higher CSP. This remarkable positive effect of separate CSR committees on CSP is confirmed by the results of the empirical study by Spitzeck (2009). This positive association is also confirmed by several other studies with data from different countries, such as studies from Baraibar-Diez and Odriozola (2019); Dixon-Fowler, Ellstrand and Johnson (2017); Mallin and Michelon (2011) and Orazalin (2020). Per the argument made in the theoretical framework section, according to *expectancy theory*, a manager would exert efforts if he/she believes in the possibility of achieving the results, which leads to the desired rewards. In this case, it is proposed that the support and guidance from the CSR committee would make managers trust in the feasibility of achieving the targeted CSR results, thus, putting more effort into CSR management and can achieve higher CSP. Therefore, the existence of CSR committee is expected to positively moderate the relationship between CSR contracting and CSP.

Hypothesis 2 (H2): *The existence of CSR committee has a positive moderating effect on the impact of the integration of sustainability targets in executive remuneration on corporate sustainability performance.*

CSR disclosure as moderator on the CSR contracting - CSP relationship

Regarding the second moderator, sustainability reporting has gained popularity in the practice of organizations all over the world (Kolk, 2010). Pérez-López, Moreno-Romero and Barkemeyer (2015) summarized two sources of motivation for adopting sustainability disclosure which are external and internal motives. While external motivations include complying with regulations and public expectations, gaining of reputation, communicating efforts or gaining licence to operate; internal motivations for CSR disclosure/reporting is that this practice can provide information to support the strategic management process of CSR management (Global Reporting Initiative, 2012; Kolk, 2010). In particular, sustainability reporting can contribute to better sustainability management by supporting the process of environmental scanning, strategy formulation, strategy implementation and evaluation. Furthermore, in the view of *reinforcement theory*, the motive of recognition of CSR efforts could act as an intrinsic award that reinforces managers to act in a way that promotes CSR and accomplish higher CSP. By disclosing CSR results or issuing a separate CSR report, managers' efforts to achieve good CSP results are acknowledged and can bring them reputation. Therefore, they would put more effort into achieving the CSR targets. Moreover, through the lens of *expectancy theory*, supportive assistance from a sound information system on CSR from CSR reports can enable them to manage CSR practice better, thus, enhancing their trust in the possibility of success. This, in turn, would positively impact managers' motivation to achieve CSR targets to get financial rewards from remuneration plans.

Hypothesis 3 (H3): *The disclosure of CSP in annual reports or the issuance of separate CSR reports has a positive moderating effect on the integration of sustainability targets in executive remuneration on corporate sustainability performance.*

External audit for sustainability reports as moderator on CSR contracting-CSP relationship

Finally, there has also been a surge in assured sustainability reports to give stakeholders a more transparent view of the firm's sustainability performance (Peters and Romi, 2015). As discussed earlier, based on *reinforcement theory*, the acknowledgement of being audited can induce

managers to conduct sustainability management in a substantive manner, thus, improving CSP. It is because the result of achieving a statement confirming the consistency and reliability of data in CSR reports would reinforce managers' actions in conducting sustainability management more substantively and can improve CSP.

Hypothesis 4 (H4): *The use of external assurance service for sustainability disclosure/reports has a positive moderating effect on the impact of the integration of sustainability targets in executive remuneration on corporate sustainability performance.*

In summary, this paper proposes four hypotheses based on a multiple-theory framework of *expectancy theory*, *reinforcement theory* and *agency theory* and updated trends in setting executive remuneration. The first one is that integration of sustainability targets in executive remuneration has a positive impact on CSP (H1). The remaining three hypotheses are that the existence of separate sustainability committee, official CSR disclosure and employment of external audit for sustainability reports have positive moderating impacts on the relationship between CSR contracting and CSP (H2, H3, H4). A graphical summary of the Conceptual Framework can be referred to in *Figure 1*.

[insert Figure 1 around here]

Figure 1. Conceptual Framework

5. Sample, Data and Research design

5.1. Research sample

To ensure the presence of companies from all EU countries and the UK as well as to maximize the possibility of obtaining sufficient data for this research, this paper employs stratified purposive sampling (Teddlie and Yu, 2007). Firstly, each country in the 27 countries of the EU and the UK is considered a stratum. Then, in each stratum, a subsample is selected based on the criteria of revenue scale. Next, for each country, a sample including companies that stood in the top 30 listed companies by revenue continuously for five years from 2014 to 2018 is selected. The information used to filter the top 30 listed companies by revenue in each country is extracted from the Bloomberg database. Each year during 2014-2018, 30 listed companies with the highest revenue for the year in each country are chosen. Then, companies that persistently stand in the top 30 list for all five years from 2014 to 2018 in each country are selected to form the subsample representing each country.

The stratified sampling method allows the researcher to compose a sample set with the presence of companies in all countries in the EU and the UK and provides a highly representative sample of the population studied (Sharma, 2017). On the other hand, the purposive sampling technique is used to choose a sample subset for each country. The purpose of choosing the largest listed companies in each country, which is based on revenue – a common criterion to determine the size of a company in literature (Al-Khazali and Zoubi, 2011), is for the sake of availability of the data, especially sustainability data. However, this purposive sampling method is usually criticised for being subjective and prone to researcher bias. In this case, we mitigate the problem by expanding the time zone that the revenue criterion is applied and selecting the companies

that demonstrate stable performance over time. After filtering, an initial sample of 442 firms in 27 EU countries and the UK are formed with expected 2,210 firm-years.

However, due to limited available data for sustainability performance assessment, CSR contracting, and the three corporate governance factors used as moderator variables in the hypotheses, only a part of the observations remain available for the study. *Table 1* shows the criteria for the data so that a specific observation is qualified for this study. *Table 2* lists out the number of firms and firm-years that have available data by country. Noticeably, the data for CSR practice and performance of eight countries (i.e. Bulgaria, Croatia, Estonia, Latvia, Lithuania, Romania, Slovakia and Slovenia) is totally absent. Therefore, these eight countries would inevitably be out of the sample.

In summary, the final sample includes 279 companies from 19 EU countries and the UK, with 1,285 firm-years for Hypothesis 1, 2, 3 and 1,144 firm-years for Hypothesis 4. In particular, the research investigates firms' sustainability performance during 2014-2018 with independent variables from 2012-2016 to account for the lagging effects of those predictor variables on CSP.

[insert Table 1 around here]
Table 1. Criteria for data availability for the hypotheses of the research

[insert Table 2 around here]
Table 2. Number of firms and firm-years/observations available for the four hypotheses

5.2. Data and variables

As mentioned before, this research investigates the impact of CSR contracting on firms' CSP. The research proposes four hypotheses that are tested with four separate models. The followings are a detailed explanation of the variables used, and *Table 3* presents definitions and data sources for all variables.

Dependent variable

The dependent variable is the firm's sustainability performance in a specific year (ESGSCORE). The Thomson Reuters ESG Combined Score is the proxy for this measure. Rajesh (2020) summarized in his literature review that ESG score had been widely used in literature as an indicator of CSP. Moreover, the number of rating agencies providing rating by score for corporations is growing remarkably due to the high demand of investors, shareholders, governments and firms to evaluate firms' sustainability performance (Escrig-Olmedo et al., 2019). Some well-known agencies are Morgan Stanley Capital International (MSCI), KLD Research & Analytics, Oekom, Vigeo, Thomson Reuters, et cetera. Among those, Thomson Reuters is commonly used as a measure of sustainability performance and is claimed to be less biased (Rajesh, 2020) for incorporating ten majors indicators (emissions, environmental innovation, resource use, community, human rights, product responsibility, workforce, CSR strategy, management, and shareholders) and over 400 firm-level indicators updated weekly (Thomson Reuters ESG Scores, 2020). Specifically, in this research, Thomson Reuters

Combined ESG Scores is used and rescaled from 0-100 scale point to 0-1 scale point. This score considers significant CSR controversies affecting the corporations under investigation.

Independent variables

The main independent variables in this research are CSR management practice information with data taken from the ESG data of Thomson Reuters Datastream. Firstly, the information about the integration of sustainability targets in executive remuneration (CSRCONTRACTING) is in the form of a dummy variable that takes the value of 1 if the company uses CSR contracting in that year and the value of 0 otherwise. Secondly, the three moderator variables, which are the existence of CSR committee (CSRCOMMITTEE), official CSR disclosure (CSRREPORT) and the use of external audit for CSR reports (EXTERNALAUDIT), are also dummy variables with 1 representing the use of these corporate governance factors, and 0 for the absence of those factors. However, a certain amount of information is missing from the database. To prevent unnecessary loss of observations, these missing data are collected manually from companies' annual reports and CSR reports on the companies' websites.

Control variables

In this research, the models incorporate control variables of firm-level and country-level variables. Firstly, regarding firm-level variables, the research controls for firm size with natural logarithm total assets (LNTOTASSET), profitability with return on assets (ROA), financial slack with times interest earned ratio (TIER), leverage with debt to total assets ratio (LEVERAGE) and firm industry type. The data for these variables are collected mainly from Thomson Reuters Datastream, except for some missing values taken from the Bloomberg database; while the data for industry type is manually collected. In previous studies, many papers have adopted firm size as a control variable and expect that it positively affects firms' CSP (e.g. Artiach et al., 2010; Maas, 2018; Russo and Harrison, 2005). In addition, it is also expected that firms with high profitability might have more available financial resources to invest in CSR management, thus, improving CSP (Flammer et al., 2019). Similarly, firms with high financial slack are expected to have more redundant resources to take care of CSR activities (Artiach et al., 2010; Ashraf et al., 2020). The same reason could be drawn for the impacts of leverage on CSP. However, firms with lower leverage would be more likely to care for CSR (Artiach et al., 2010). In terms of firm industry, the research controls for two types of industry which are "dirty industries" (i.e. extraction, farming, utility and manufacturing) and "clean industries" (i.e. the remaining) (Cordeiro and Tewari, 2014). This variable takes the form of a dummy variable with 1 relating to "dirty industry" and 0 otherwise. It is expected that firms in "clean industries" would have better CSP.

Regarding country-level control variables, the research accounts for the country-level sustainability performance proxied by the Human Development Index (HDI). This index is provided by the United Nations and Environmental Performance Index (EPI), which is the result of the cooperation of Yale Center for Environmental Law and Policy (YCELP), Yale University, Columbia University Center for International Earth Science Information Network (CIESIN), and the World Economic Forum (WEF). While HDI can cover the effects of general living standards of the citizens, EPI provides information about national environmental health and ecosystem vitality. These factors can partly affect firms' CSR activities because firms in countries with high HDI and EPI might have better facilities to conduct CSR activities and have

more motivation to pursue CSR because of the high average human development and environmental concern. Therefore, it is common that relevant country-level factors are included in firm performance studies (e.g. Griffin et al., 2017; Ullah et al., 2019; Villiers and Marques, 2015).

[insert Table 3 around here]
Table 3. Definitions and sources of data for variables

5.3. Research design

It can be inferred from previous parts that this research follows positivism philosophy (Saunders, Lewis and Thornhill, 2016), quantitative methodology with deductive research approach (Creswell and Creswell, 2018, p41). Through the literature review, it is detected that there is a need for research that contributes to the pool of quantitative research to find more evidence for generalizing the conclusion about the relationship between CSR contracting and CSP.

We test serial correlation in linear panel data (Drukker, 2003) and the results show no autocorrelation problem for all four models with p-values being significantly greater than 0.10 for the Wooldridge test for autocorrelation in panel data (Mehmetoglu and Jakobsen, 2017). Then the Breusch-Pagan/Cook-Weisberg test is used to detect heteroscedasticity problem, and heteroscedasticity exists for all four models. This problem is solved using the Huber-White robust standard errors to relax the assumptions and arrive at reasonably accurate p-values while not changing coefficient estimates (Mehmetoglu and Jakobsen, 2017). Therefore, pooled OLS regression with robust standard errors is employed for all four models in this study. From the review of literature and theories, four hypotheses are proposed for empirical testing. *Table 4* summarizes four hypotheses with corresponding theories.

[insert Table 4 around here]
Table 4. Summary of Hypotheses

All explanatory variables and control variables are lagged by two years. It accounts for the performance persistence (Maas, 2018) and the fact that the actions that take place at the current time might not show results immediately but after a specific period. Regarding research with CSP as dependent variable, one year to three years of lagging period had been used (e.g. Flammer et al., 2019; Mass, 2018; Orazalin, 2020). This research uses two years of lagging time because it is a reasonable period for CSR management mechanisms to prove its effects. At the same time, it is not a too long period that permits too many events to interfere with the hypothesized relationships (Graves and Waddock, 1999).

The four hypotheses are tested by four separated pooled OLS models with robust standard errors. As mentioned above, all variables on the right-hand side are lagged by two years. Regarding Hypothesis 1, the impact of the integration of sustainability targets on CSP is investigated solely, while the effects of firm-level and country-level variables are controlled. Regarding Hypotheses 2, 3, and 4, which investigate the moderating effects of three corporate governance variables on the CSR contracting - CSP relationship, a production term of the

predictor and each of the moderators is added to the models. These models are also controlled for firm-level and country-level variables mentioned before. The followings are the pooled OLS models with robust standard errors to test four hypotheses.

Hypothesis 1:

$$ESGSCORE_{it} = \beta_0 + \beta_1 CSRCONTRACTING_{i(t-2)} + \beta_8 LNTOTALASSET_{i(t-2)} + \beta_9 ROA_{i(t-2)} + \beta_{10} TIER_{i(t-2)} + \beta_{11} LEVERAGE_{i(t-2)} + \beta_{12} INDUSTRY_i + \beta_{13} HDI_{i(t-2)} + \beta_{14} EPI_{i(t-2)} + \varepsilon_{it}$$

Hypothesis 2:

$$ESGSCORE_{it} = \beta_0 + \beta_1 CSRCONTRACTING_{i(t-2)} + \beta_2 CSRCOMMITTEE_{i(t-2)} + \beta_3 CSRCONTRACTING_{i(t-2)} * CSRCOMMITTEE_{i(t-2)} + \beta_8 LNTOTALASSET_{i(t-2)} + \beta_9 ROA_{i(t-2)} + \beta_{10} TIER_{i(t-2)} + \beta_{11} LEVERAGE_{i(t-2)} + \beta_{12} INDUSTRY_i + \beta_{13} HDI_{i(t-2)} + \beta_{14} EPI_{i(t-2)} + \varepsilon_{it}$$

Hypothesis 3:

$$ESGSCORE_{it} = \beta_0 + \beta_1 CSRCONTRACTING_{i(t-2)} + \beta_4 CSRREPORT_{i(t-2)} + \beta_5 CSRCONTRACTING_{i(t-2)} * CSRREPORT_{i(t-2)} + \beta_8 LNTOTALASSET_{i(t-2)} + \beta_9 ROA_{i(t-2)} + \beta_{10} TIER_{i(t-2)} + \beta_{11} LEVERAGE_{i(t-2)} + \beta_{12} INDUSTRY_i + \beta_{13} HDI_{i(t-2)} + \beta_{14} EPI_{i(t-2)} + \varepsilon_{it}$$

Hypothesis 4:

$$ESGSCORE_{it} = \beta_0 + \beta_1 CSRCONTRACTING_{i(t-2)} + \beta_6 EXTERNALAUDIT_{i(t-2)} + \beta_7 CSRCONTRACTING_{i(t-2)} * EXTERNALAUDIT_{i(t-2)} + \beta_8 LNTOTALASSET_{i(t-2)} + \beta_9 ROA_{i(t-2)} + \beta_{10} TIER_{i(t-2)} + \beta_{11} LEVERAGE_{i(t-2)} + \beta_{12} INDUSTRY_i + \beta_{13} HDI_{i(t-2)} + \beta_{14} EPI_{i(t-2)} + \varepsilon_{it}$$

6. Empirical findings

6.1. Descriptive statistics and univariate analysis

This section explores the characteristics of the data in the sample under study. *Table 5* provides descriptive statistics for the continuous variables. All variables show standard statistics except for ROA and TIER, which demonstrate significant abnormal distribution with extreme skewness and kurtosis. Regarding ROA and TIER, we can also see the extreme values in the data set for these variables, indicating the presence of outliers. This problem is not ideal with an OLS regression. To deal with this problem, a robust test is employed by running regressions that exclude these two problematic variables to see if the results remain the same (Mehmetoglu and Jakobsen, 2017, p. 488).

[insert Table 5 around here]

Table 5. Descriptive statistics for continuous variables

Subsequently, *Table 6* provides the univariate analysis of CSR contracting (CSRCONTRACTING) against other independent and control variables. The results show that observations with CSR contracting also have a slightly higher mean ESG score. This result supports the hypothesis that CSR contracting contributes to better CSP. In addition, the percentage of firms having a CSR committee, issuing CSR reports and using external audit for sustainability reports of observations from firms using CSR contracting is also higher than that

of observations from firms without CSR contracting. This pattern might indicate a correlation between the presence of these three corporate governance practices and the use of CSR contracting. Therefore, a multicollinearity test is necessary to see if there are any multicollinearity problems. However, the correlation matrix presented in *Table 7* shows no multicollinearity problem because all values are smaller than the standard threshold of 0.80 (Mehmetoglu and Jakobsen, 2017, p. 217). Furthermore, the results also show that firms with CSR contracting are a little bigger, which is consistent with earlier expectations. Moreover, firms using CSR contracting have lower leverage ratio on average. It might be because firms with lower debt burdens would be more likely to care about CSR management.

[insert Table 6 around here]
Table 6. Univariate (mean) comparisons of observations with CSR contracting and observations without CSR contracting

[insert Table 7 around here]
Table 7. Correlation matrix

6.2. Trend analysis

Regarding the pattern of adoption of the corporate governance mechanisms of CSR management among firms in the sample, *Figure 2* provides a summary of the trends. As can be seen from *Figure 2*, the use of CSR committee, CSR report and external audit for CSR report are quite popular among the firms in the sample, and the trend of these practices remain consistent. Moreover, it is astonishing that the percentage of firms using CSR contracting in the sample decreased over the years. It contrasts with comments from prior studies (e.g. Deegan and Islam, 2012; Flammer et al., 2019; Maas and Rosendaal, 2016; Sullivan & Cromwell LLP, 2020).

[insert Figure 2 around here]
Figure 2. Percentage of adoption of CSR management tools in the sample

6.3. Results and discussion

[insert Table 8 around here]
Table 8. Pooled OLS regression with time lag independent variables, where dependent variable is Thomson Reuters ESG score

The results of the OLS regression for the four models are presented in *Table 8*. As can be seen from *Table 8*, the statistical results of Model 1 indicate that there is a significant positive effect of the use of CSR contracting on CSP. In particular, adopting CSR contracting would bring about a 0.0755693 point increase in ESG score ($p = 0.000$). In addition, firm size (0.0078264, $p = 0.062$) and EPI also show significant positive impacts on firms' sustainability performance. This result lends strong support to Hypothesis 1. This result is consistent with the findings of previous studies that use different indices for proxies of CSR performance. For example, Flammer et al. (2019) found that the KLD-index increases by 0.2 index points upon the adoption of CSR contracting. Similarly, Ikram et al. (2019) also found statistical support for the positive

impact of CSR-contingent compensation contracts on the future CSR rating of firms. Another study from Maas (2018) used summarized scores of six MSCI ESG STATS relating to employee relations, product quality, community relations, natural environment, human rights, and diversity as a proxy for CSP. He also finds a significant positive impact of using quantitative, hard targets for CSR targets in executive remuneration on CSR outcomes. This result provides additional persuasive reason for the advocacy for CSR contracting of many international organizations, such as the United Nations Global Compact and Principles for Responsible Investment, World Business Council for Sustainable Development or national organizations, such as Dutch Association of Investors for Sustainable Development. In this context, the outcomes of the statistical tests can confirm the expectation built from *reinforcement theory*, *expectancy theory* and *agency theory* in the previous part about the improvement of CSP when firms integrate CSR targets in executive remuneration. CSR targets in executive remuneration might indirectly enhance CSP by driving managers' attention towards CSR and providing financial motivation for managers to take actions on CSR. The statistically confirmed theoretical framework of this study can offer new ground for explaining how CSR contracting works. In addition, CSR contracting also signals the approval and interests of "salient stakeholders" about CSR, which, in turn, encourages managers to take more CSR actions and aim to enhance CSP. "Salient stakeholders" are those in formal contractual relationships with the firms, such as consumers, employees, shareholders, and debtholders. In contrast, "less salient stakeholders" are the ones who do not have direct impacts on firms' bottom lines, such as local communities or natural environment (Mitchell, Agle and Wood, 1997). It is argued that managers naturally pay more attention to and prioritize the demands of "salient stakeholders" than that of "less salient stakeholders" (Eesley and Lenox, 2006). With the integration of CSR targets in executive remuneration, their attention is redirected to the interests of "less salient stakeholders", and CSP might be improved. This result can give practitioners more confidence in considering sustainability-related executive contracts. In addition, as analyzed in the data section, a downward trend has been observed in the popularity of CSR contracting in the sample. Although this pattern is not representative and conclusive about the overall trend, the statistical results suggest that more EU and UK firms should seriously consider CSR contracting if they care about their CSP. Moreover, governors and authorities can refer to the results as evidence to issue rules promoting CSR contracting. Furthermore, governors can direct firms' attention towards desired aspects such as environment, ecological diversity or local community by providing incentives for companies that incorporate CSR targets in remuneration schemes or the personal income related to sustainability targets. Europe is considered the leader in CSR and CSR policies (Steurer, 2010). Steurer (2010) listed three types of instruments that governments can apply to address CSR: informational, economic, and legal instruments. Governments might consider using informational instruments by offering conferences, seminars or training; providing information resources such as brochures, websites, and reports; publishing guidelines about CSR contracting and how to apply CSR practices effectively. Moreover, economic instruments are also promising to guide firms' attention towards CSR practices. These incentives relate to offering tax breaks for companies which apply CSR-contingent executive remuneration. Last but not least, another method is legal instruments which are legal/constitutional acts. However, in the case of CSR contracting, legal instruments might not be the appropriate ones.

Regarding the second model, the statistical results surprisingly show a contrasting outcome against the hypothesis with the effect of CSR contracting on CSP of firms having CSR committees being 0.0475032 ESG score points lower than that of firms who do not have CSR committees. However, this result is not statistically significant. On the other hand, the simple main (conditional) effects of the predictor (CSR contracting) and the moderator (CSR committee) prove significant positive results. Although these results do not support Hypotheses 2, they confirm the effectiveness of CSR contracting (Flammer et al., 2019) when no CSR committees are present, and of CSR committees (Spitzeck, 2009) when there is no integration of CSR criteria in executive payment. Biswas, Mansi and Pandey (2018) concluded that changes in CSR committee structure and the CSR committee's independence could affect CSR outcomes. Therefore, in future research, we could investigate if these factors lead to changes in the moderating impact of CSR committee on CSR contracting – CSP relationship. For example, a more independent CSR committee might advise a tighter executive CSR contracting for the board, which might cause insufficient motivation for managers to take serious CSR actions. These are all relevant issues that practitioners need to consider to utilize the effectiveness of this mechanism. In addition, the results also show that firms in "dirty industries" have higher scores (0.0284488, p = 0.061). Since firms in "dirty industries" usually receive scrutiny from the authorities and the public, they tend to be more aware of CSR activities (Kunapatarawong and Martínez-Ros, 2016). Similar to the first model, EPI has a significant positive impact on CSP (0.3216037, p = 0.000). The result shows a significant negative impact on HDI (-0.5006432, p = 0.097). The result for HDI is contradictory to expectations. However, the results for HDI are not significant in other models, so there is no strong statistical evidence for a conclusion about the impact of HDI on firms' sustainability performance.

Regarding Hypothesis 3, the results show statistical support for the significance of the moderating impact of CSR report on the relationship between CSR contracting and CSP. However, in contradiction to Hypothesis 3, the moderating effect of CSR reports is significantly negative. For firms that issue CSR report, the impact of CSR contracting is 0.1071223 points (p = 0.078) less than that of firms that do not issue CSR reports. *Figure 3* illustrates the interaction relationship. We can see that when a firm does not issue CSR report (CSRREPORT = 0), the line describing the effect of CSR contracting is more steeply upward than in the other case. CSR report is argued to provide information about internal and external factors affecting firms' ability to carry out their strategic plans and achieve strategic goals (Shad, Lai, Fatt, Klemes and Bokhari, 2019). Therefore, these statistical results raise the question of whether current reporting supports managers in managing CSR activities in the right way and effectively. Aras and Crowther (2009) blamed that contemporary sustainability reporting could not effectively emphasize CSR risks and opportunities. It is because most sustainability reports are carried out with an outside-in approach which mainly aims to satisfy the public and serve external parties such as rating agencies, the media or stakeholders (Schaltegger and Wagner, 2006). This lack of clarity on CSR risks and opportunities causes information to be distorted and misleads managers in decision-making (Burritt and Stefan, 2010). This problem might cause managers to be confused as CSR reports could not support them as much as they expect, and the trust or motivation mentioned before for achieving sustainability targets might decrease. This, in turn, weakens the positive impact of CSR contracting because based on *expectancy theory*, managers will try more to achieve the targets if they trust that they can succeed. In the context of the EU and the UK around the studied period, the requirement for sustainability

reporting has been relatively weak, and the extent to which firms committed to CSR depends on their free will (Fifka and Drabble, 2012). However, many companies in this region choose to publish sustainability information as a resort to face external pressure from consumers, NGOs and investors (Delbard, 2008). Therefore, it might be the case that the information could not serve as a good source for managerial decision-making. Currently, under Directive 2014/95/EU, large public-interest companies with more than 500 employees are required to disclose CSR information, including environmental matters, social matters and treatment of employees, respect for human rights, anti-corruption and bribery, and diversity in company boards. These compulsory reporting points are all ex-post information which might only be helpful for authorities and external users in judging CSR activities of firms. In particular, for CSR information to be meaningful for management, CSR reports should consist of both ex-ante and ex-post information. Ex-ante information might cover forecasted figures about CSR, future CSR trends, et cetera. It is noteworthy that the results show that the use of CSR report does not reverse the effect of CSR contracting, the interaction of CSR report decreases the strength of the positive impact that CSR contracting has on CSP. In addition, financial slack (TIER) also imposes a positive impact on CSP (0.0000222, p = 0.044). However, this variable is not statistically significant in other models. Therefore, there is little evidence for the statistical significance of this factor. As in previous models, EPI shows a significant positive impact on CSP (0.2544284, p = 0.000).

[insert Figure 3 around here]

Figure 3. Graphical presentation of interaction relationship of CSR contracting and official CSR disclosure and its impact on CSP

To turn to Hypothesis 4, statistical results reveal that for firms which employ external audit for their CSR report, the impact of CSR contracting on ESG score is 0.062366 points lower than that of firms which do not have external audit for CSR report. This result is statistically significant (p = 0.054), which denies Hypothesis 4. *Figure 4* graphically illustrates this interaction relationship, and we can see that the line for firms that do not use external audit for CSR reports is steeper than that of those that have their sustainability audited. It is noteworthy that all the companies included in Model 4 issue CSR reports. Therefore, the result of this model should not be affected by the effect mentioned in Model 3. This result reveals an opposite picture to what is mentioned by Jones, Hillier and Comfort (2016). In their research, they referred to the statement made by CSR Europe that CSR assurance can significantly enhance internal management of CSR because the process of conducting the assurance statement would involve management system checking. This activity, in turn, is an effective feedback system for managers to improve CSR plans and give a boost to CSP. Nevertheless, the situation might not be as simple and direct as that. It might be the case that when the firm intends to employ external audit for CSR reports, they might mainly focus on following a standard reporting guideline, for example, GRI. This practice might, to some extent, drive the reporting system away from the managerial needs and is not customized for the specific needs of managers. If this is the case, the firms should keep an eye on both reporting for external purposes and reporting for managerial decision support. This practice would assist managers in solving social and environmental business problems and utilizing opportunities (Burritt and Stefan, 2010). In addition, as in previous models, EPI proves a significant positive impact (0.2310408, p = 0.000). The result proves contradictory results to the last hypothesis.

[insert Figure 4 around here]

Figure 4. Graphical presentation of interaction relationship of CSR contracting and External audit for CSR report and its impact on CSP

In summary, statistical results support Hypothesis 1, while no significant statistical evidence is found for Hypothesis 2. On the other hand, results show statistically significant contrast results to Hypotheses 3 and 4.

6.4. Robustness test

The robustness test excludes two variables demonstrating problems of abnormal distribution and outliers (i.e. ROA and TIER). The results of this test are presented in *Table 9*. As can be seen from *Table 9*, the results and the statistical significance of those results are noticeably similar to those of the main tests (*Table 8)*. This result means that the problems mentioned before do not affect the outcomes of the models and that the main results are robust.

[insert Table 9 around here]

Table 9. Robustness test with Pooled OLS models which omits problematic variables (ROA and TIER), where dependent variable is Thomson Reuters ESG score

7. Summary and conclusion

This research responds to the call for more studies about CSR contracting in the context where CSR has been attracting significant attention from investors, the public and regulators. Especially with *"The European Green Deal*" presented in December 2019, the EU promises to take the lead in using its influence, expertise, and financial resources to support international efforts in tackling climate change, environmental issues and improving people's quality of life. In addition, the moderating effects of three governance tools, namely, sustainability committee, sustainability reports and external assurance service for sustainability reports on the CSR contracting – CSP relationship are also investigated. Data for a sample of firms across 19 EU countries and the UK are collected from Datastream, Bloomberg and collected manually to run pooled OLS regressions to find the answers to the research questions.

The first key finding in this research is that adopting CSR contracting enhances firms' CSR performance, measured by Thomson Reuters ESG score. Secondly, with the issuance of CSR reporting, the positive effect of the integration of CSR targets in executive remuneration on CSP weakens significantly. Thirdly, the moderating effect of external audit for CSR reports also shows a similar negative moderating effect. In particular, the employment of CSR external assurance associates with a lower positive impact of CSR contracting on CSP. Last but not least, regarding the control variables, only one variable shows a consistently significant relationship with CSP. It is the country-level variable – the Environmental Performance Index (EPI) of the country where the firm operates.

First, our result contributes to the existing theoretical literature by suggesting that CSR-contingent executive remuneration positively affects firms' CSP. Second, this result confirms the theoretical framework proposed to explain how CSR-contracting affects executives'

behavior, which leads to the impacts on CSP. This research contributes to the extant literature by offering a multiple-theory framework to explain how CSR contracting positively affects CSP. Third, we use a sample from 19 EU countries and the UK to cover the significant gap in research about the relationship between CSR contracting and CSP because research about this topic has been dominantly conducted in the US. Our statistical results confirm the generalizability of the positive effect of CSR contracting by investigating the topic in the context of a broad leading economic region like the EU and the UK. Fourth, the statistical results suggest that moderating impact of CSR reports and CSR external assurance on the CSR contracting – CSP relationship is negative. It is undeniable that CSP of firms is affected by multiple factors, and consideration of moderating effects of different corporate governance practices is valuable. The study of these moderating relationships contributes to the extant literature that has not investigated these relationships previously.

Our findings have several practical and policy implications. First, our evidence suggests that CSR can bring good results in improving CSR performance of firms. Therefore, CSR contracting might be an effective tool that shareholders with a green mind can consider to drive the attention of managers and all levels in firms towards CSR. In addition, policymakers should also pay attention to this tool and motivate the integration of CSR targets in executive remuneration by appropriate initiatives. Policymakers can use informational instruments or economic instruments to encourage firms to engage in CSR contracting. Second, practitioners and regulators should pay attention to the findings of moderating effects of CSR reports and external assurance for CSR reports. It is highly recommended that specific customization of the tools for each using purpose (i.e., external reporting or managerial reporting) is implemented. It is observed that CSR reporting in the EU currently focuses on external reporting with historical information. Therefore, information in current CSR reports might not be useful to executives in planning for CSR activities and controlling the CSR progress or outcomes. It is advisable that regulators issue guidance and requirements for CSR reports for internal use by managers. International organizations can consider providing training and funding to help countries improve their sustainability. Third, evidence from this research shows that the EPI of the country positively affects CSP. Therefore, at the country level, governments should put effort into improving the overall sustainability performance of the whole country in every aspect.

Despite the crucial contributions of this research, the study still has several limitations. Firstly, due to the limitation of data and time, the main variable CSR contracting is studied in only dummy variable form. This limits the scope of the research question to the simple study of the adoption of CSR and CSP. Future research can take a more holistic approach to studying the characteristics of CSR contracting. For example, future research can study the weight of CSR targets in total remuneration, types of CSR targets (i.e. quantitative and qualitative targets), et cetera. Based on the knowledge about these characteristics of CSR contracting, researchers can investigate their relationship with CSP to see at which level CSR contracting starts to work effectively or which type of CSR targets are more effective. Another limitation is also subjected to the limitation of data availability. This leads to companies in eight countries in the EU initially included in the sample being excluded afterwards. It is expected that if all countries could be included in the sample, the result might be even more significant and representative of the whole economic area. In the future, researchers might update statistics in those eight

countries to increase the cover range of the sample. In addition, the insignificant result of moderating effect of CSR committee as well as the unexpected results of moderating effects of CSR reports and external assurance for sustainability reports could also be studied further in the future. Researchers can study deeper about how these tools could be used more effectively and be more supportive for CSR contracting in particular and for CSR management in general.

DATA AVAILABILITY STATEMENT

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

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TABLES

Hypothesis	**Information about CSP index available**	**Information about CSR contracting available**	**Information about existence of CSR committee available**	**Information about Official CSR disclosure available**	**Information of the use of external audit for CSR report available**
Hypothesis 1	x	x			
Hypothesis 2	x	x	x		
Hypothesis 3	x	x		x	
Hypothesis 4	x	x		x	x

Table 1. Criteria for data availability for the hypotheses of the research

Country	Hypothesis 1		Hypothesis 2		Hypothesis 3		Hypothesis 4	
	Number of firms	Number of firm-years	Number of firms	Number of firm-years	Number of firms	Number of firm-years	Number of firms	Number of firm-years
Austria	14	58	14	58	14	58	13	55
Belgium	11	55	11	55	11	55	9	46
Cyprus	1	5	1	5	1	5	1	6
Czech	4	20	4	20	4	20	3	14
Denmark	24	98	24	98	24	98	22	84
Finland	19	84	19	84	19	84	19	85
France	25	121	25	121	25	121	25	121
German	21	105	21	105	21	105	20	97
Greece	12	55	12	55	12	55	11	48
Hungary	5	21	5	21	5	21	4	18
Ireland	14	70	14	70	14	70	11	44
Italy	14	68	14	68	14	68	13	57
Luxembourg	11	45	11	45	11	45	6	28
Malta	2	5	2	5	2	5	0	0
Netherlands	15	73	15	73	15	73	13	64
Poland	13	63	13	63	13	63	12	45
Portugal	11	34	11	34	11	34	10	31
Spain	14	70	14	70	14	70	14	70
Sweden	24	110	24	110	24	110	22	106
UK	25	125	25	125	25	125	25	125
Total	**279**	**1,285**	**279**	**1,285**	**279**	**1,285**	**253**	**1,144**

Table 2. Number of firms and firm-years/observations available for the four hypotheses

Variables	Type	Definition	Datastream Code/ Source
Corporate Sustainability Performance (ESGSCORE)	Dependent variable	Measurement of firms' corporate sustainability performance with the use of Thomson Reuters ESG Combined Score. This score ranges from 0 to 1, the higher value indicates better relative ESG performance and better degree of transparency in reporting material ESG data publicly.	TRESGCS (Datastream ASSET4)
Executive CSR contracting (CSRCONTRACTING)	Independent variable & Predictor	Dummy variable which takes the value of 1 if the company integrates sustainability targets in executive remuneration and 0 if the company does not.	CGCP009V (Datastream ASSET4)
CSR Sustainability Committee (CSRCOMMITTEE)	Independent variable & Moderator	Dummy variable which takes the value of 1 if the company has a separate CSR/sustainability committee and 0 if the company does not.	CGVSDP005 (Datastream ASSET4)
Official CSR disclosure (CSRREPORT)	Independent variable & Moderator	Dummy variable which takes the value of 1 if the company publishes a separate CSR/sustainability report or publish a separate section on CSR/sustainability in its annual report and 0 if the company does not.	CGVSDP026 (Datastream ASSET4)
CSR Sustainability External Audit (EXTERNALAUDIT)	Independent variable & Moderator	Dummy variable which takes the value of 1 if the company has its CSR/sustainability disclosure/reports audited by external auditors and 0 if the company does not.	CGVSDP030 (Datastream ASSET4)
ln Total Asset - Firm size (LNTOTALASSET)	Firm-level control variable	Natural logarithm of firms' total assets in a specific year.	DWTA (Datastream)
ROA - Profitability (ROA)	Firm-level control variable	Return on Assets in a specific year.	F0ROA (Datastream)
Times interest earned ratio -Financial slack (TIER)	Firm-level control variable	Times interest earned ratio (Earning before Interests and Taxes/Total Interest Expense Ratio) in a specific year.	WC08291 (Datastream)

Leverage (LEVERAGE)	Firm-level control variable	Total debt/Total assets ratio in a specific year.	WC08236 (Datastream)
Industry (INDUSTRY)	Firm-level control variable	Dummy variable which takes the value of 1 if the company operates in extraction/farming/utility/manufacturing and 0 otherwise.	Manually collected
Human Development Index (HDI)	Country-level control variable	Human Development Index	United Nations Human Development Programme - Human Development Reports (http://hdr.undp.org/en/data)
Environmental Performance Index (EPI)	Country-level control variable	Environmental Performance Index (Rescaled to 0-1 value range)	Yale Center for Environmental Law & Policy (https://epi.yale.edu/)

Table 3. Definitions and sources of data for variables

Hypothesis	Main predictor and moderator variables	Theory	Effects	
			On CSP	On the effects of CSR contracting on CSP
H1	CSR contracting	Expectancy theory; Reinforcement theory; Agency theory	Positive effect (+)	
H2	Predictor: CSR contracting Moderator: CSR committee	Expectancy theory; Agency theory		Positive effect (+)
H3	Predictor: CSR contracting Moderator: Official CSR disclosure	Expectancy theory; Reinforcement theory; Agency theory		Positive effect (+)
H4	Predictor: CSR contracting Moderator: External audit for CSR report	Reinforcement theory; Agency theory		Positive effect (+)

Table 4. Summary of Hypotheses

Variables	N	Mean	SD	Median	Min	Max	Skewness	Kurtosis
ESGSCORE	1,299	0.60	0.17	0.62	0.01	0.92	-0.60	3.10
LNTOTALASSET	1,297	17.12	2.04	17.15	9.25	23.12	-0.13	3.77
ROA	1,291	4.57	5.55	3.49	-19.91	37.03	1.78	9.72
TIER	1,298	35.18	207.89	5.21	-716.80	4458	13.54	232.22
LEVERAGE	1,298	24.70	14.82	24.04	0.00	119.24	0.75	4.95
HDI	1,299	0.90	0.03	0.91	0.83	0.94	-0.72	2.55
EPI	1,299	0.78	0.09	0.78	0.57	0.91	-0.39	2.15

Table 5. Descriptive statistics for continuous variables

Variables	Observations	Group of observations with CSR contracting	Group of observations without CSR contracting	p-value for difference
Corporate Sustainability Performance				
ESGSCORE	1,296	0.6431203	0.57868	0.0000
Sustainability corporate governance mechanism				
CSRCOMMITTEE	1,296	0.9207921	0.7118834	0.0000
CSRREPORT	1,296	0.9777228	0.8699552	0.0000
EXTERNALAUDIT	1,184	0.8740554	0.7280813	0.0000
Firm-level characteristics				
LNTOTALASSET	1,296	17.38851	17.00254	0.0009
ROA	1,296	4.913099	4.403806	0.1180
TIER	1,296	46.54096	29.32365	0.2433
LEVERAGE	1,296	23.42574	25.30409	0.029
INDUSTRY	1,296	0.490099	0.421525	0.0221
Country-level characteristics				
HDI	1,296	0.9043688	0.8993285	0.0008
EPI	1,296	0.7481809	0.7983716	0.0000

Table 6. Univariate (mean) comparisons of observations with CSR contracting and observations without CSR contracting

	ESGSCORE	CSRCONTRACTING	CSRCOMMITTEE	CSRREPORT	EXTERNALAUDIT	LNTOTALASSET	ROA	TIER	LEVERAGE	INDUSTRY	HDI	EPI
ESGSCORE	1											
CSRCONTRACTING	0.1162	1										
CSRCOMMITTEE	0.3557	0.1843	1									
CSRREPORT	0.304	0.1015	0.26	1								
EXTERNALAUDIT	0.34	0.1654	0.3302	0.2492	1							
LNTOTALASSET	0.0479	0.0631	0.1231	0.0214	0.1729	1						
ROA	0.0547	0.0494	0.0337	0.0604	-0.1207	-0.2369	1					
TIER	0.0553	0.0352	0.0119	0.0172	-0.0191	-0.0488	0.4918	1				
LEVERAGE	0.037	-0.0365	0.066	0.0024	0.0961	0.0433	-0.26	-0.244	1			
INDUSTRY	0.0926	0.0581	0.0068	0.073	0.0647	-0.1214	0.1647	-0.0167	0.0273	1		
HDI	0.0393	0.0884	0.1363	0.0998	-0.0239	-0.0643	0.1636	0.0816	-0.044	0.008	1	
EPI	0.0999	-0.2888	-0.0168	0.0779	0.0048	-0.0115	-0.0126	0.0229	-0.033	-0.0085	0.2916	1

Table 7. Correlation matrix

Variables	Model 1	Model 2	Model 3	Model 4
CSRCONTRACTING	0.0755693 *** (0.0146576)	0.0806535 * (0.0411763)	0.151052 ** (0.0593878)	0.0794022 ** (0.0297435)
CSRCOMMITTEE		0.1993758 *** (0.0217518)		
CSRCONTRACTING*CSRCOMMITTEE		-0.0475032 (0.0426259)		
CSRREPORT			0.2796097 *** (0.029372)	
CSRCONTRACTING*CSRREPORT			-0.1071223 * (0.0606154)	
EXTERNALAUDIT				0.115851 *** (0.0224286)
CSRCONTRACTING*EXTERNALAUDIT				-0.062366 * (0.0322522)
LNTOTALASSET	0.0078264 * (0.0041695)	0.001005 (0.0036926)	0.0029809 (0.0036406)	0.001429 (0.0038526)
ROA	0.0015707 (0.0017166)	0.0004659 (0.0013726)	0.000863 (0.0012963)	0.0021839 (0.0038526)
TIER	0.0000222 (0.0000222)	0.0000269 (0.000017)	0.0000339 ** (0.0000167)	0.000021 (0.0000164)
LEVERAGE	-0.0003319 (0.0007452)	-0.0005009 (0.0005673)	0.0003447 (0.000555)	0.0004188 (0.0005984)
INDUSTRY	0.026718 (0.0180576)	0.0284488 * (0.0151394)	0.0146002 (0.0147963)	0.0179009 (0.0150652)
HDI	-0.1971799 (0.3611311)	-0.5006432 * (0.3008292)	-0.3484989 (0.2906007)	-0.3336582 (0.2907981)
EPI	0.3528199 *** (0.0603694)	0.3216037 *** (0.0525122)	0.2544284 *** (0.0499678)	0.2310408 *** (0.0492412)
Constant	0.331742 (0.3182661)	0.6115483 ** (0.2652568)	0.3753552 (0.256322)	0.5944786 ** (0.2681357)

Observations	1,285	1,285	1,285	1,144
R-squared	0.0736	0.2663	0.2649	0.1108

*** p < 0.01; ** p < 0.05; * p < 0.10, based on two-tailed tests, robust standard errors, clustered at the firm level.

Table 8. Pooled OLS regression with time lag independent variables, where dependent variable is Thomson Reuters ESG score

Variables	Model 1	Model 2	Model 3	Model 4
CSRCONTRACTING	0.0761462 ***	0.0815572 **	0.1457798 **	0.0781322 **
CSRCOMMITTEE		0.2001498 ***		
CSRCONTRACTING*CSRCOMMITTEE		-0.0481911		
CSRREPORT			0.279568 ***	
CSRCONTRACTING*CSRREPORT			-0.1011205 *	
EXTERNALAUDIT				0.1128103 ***
CSRCONTRACTING*EXTERNALAUDIT				-0.0598987 *
LNTOTALASSET	0.0068403 *	0.0005804	0.0023194	0.0002762
LEVERAGE	-0.0005439	-0.0006276	0.0001586	0.0001263
INDUSTRY	0.0284396	0.0287644 *	0.0153649	0.0210873
HDI	-0.1394691	-0.4741088	-0.3065379	-0.2581632
EPI	0.3490839 ***	0.3207413 ***	0.2528377 ***	0.2234041 ***
Constant	0.3117868	0.6009489 **	0.3593483	0.5710043 **
Observations	1,285	1,285	1,285	1,144
R-squared	0.0697	0.2648	0.2618	0.1029

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.10$, based on two-tailed tests, robust standard errors, clustered at the firm level.

Table 9. Robustness test with Pooled OLS models which omits problematic variables (ROA and TIER), where dependent variable is Thomson Reuters ESG score

FIGURES

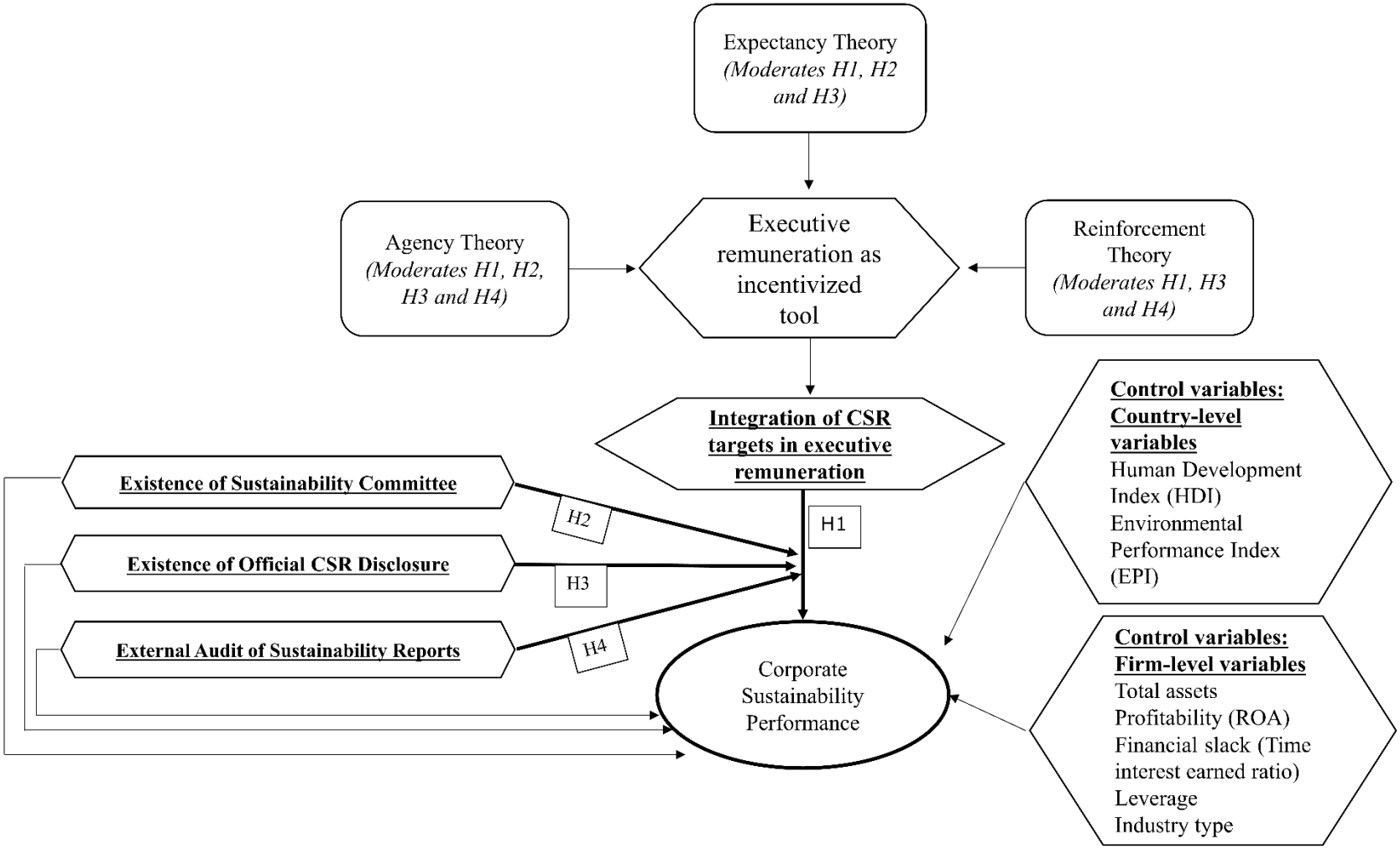
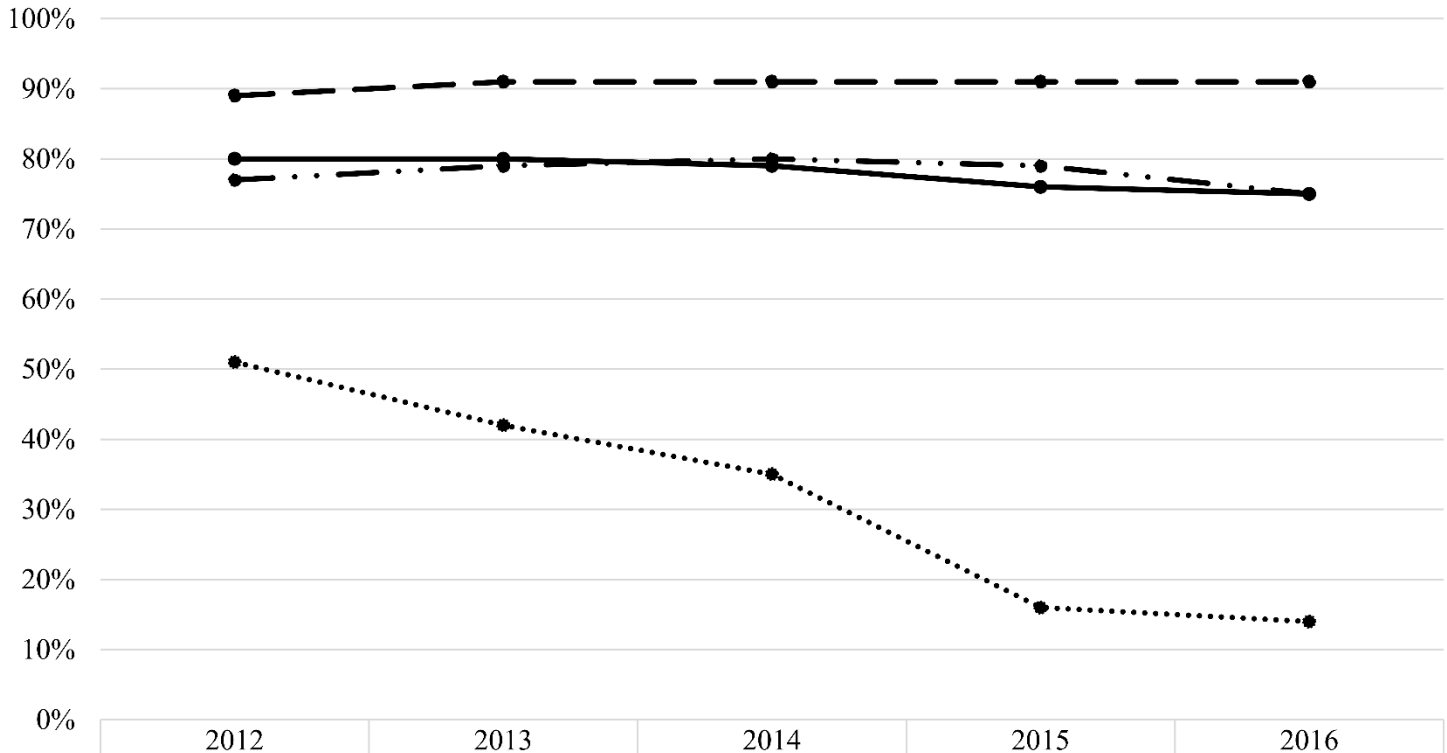


Figure 1. Conceptual Framework



	2012	2013	2014	2015	2016
CSR contracting	0.51	0.42	0.35	0.16	0.14
CSR committee	0.8	0.8	0.79	0.76	0.75
Official CSR disclosure	0.89	0.91	0.91	0.91	0.91
External audit for sustainability reports	0.77	0.79	0.8	0.79	0.75

Figure 2. Percentage of adoption of CSR management tools in the sample

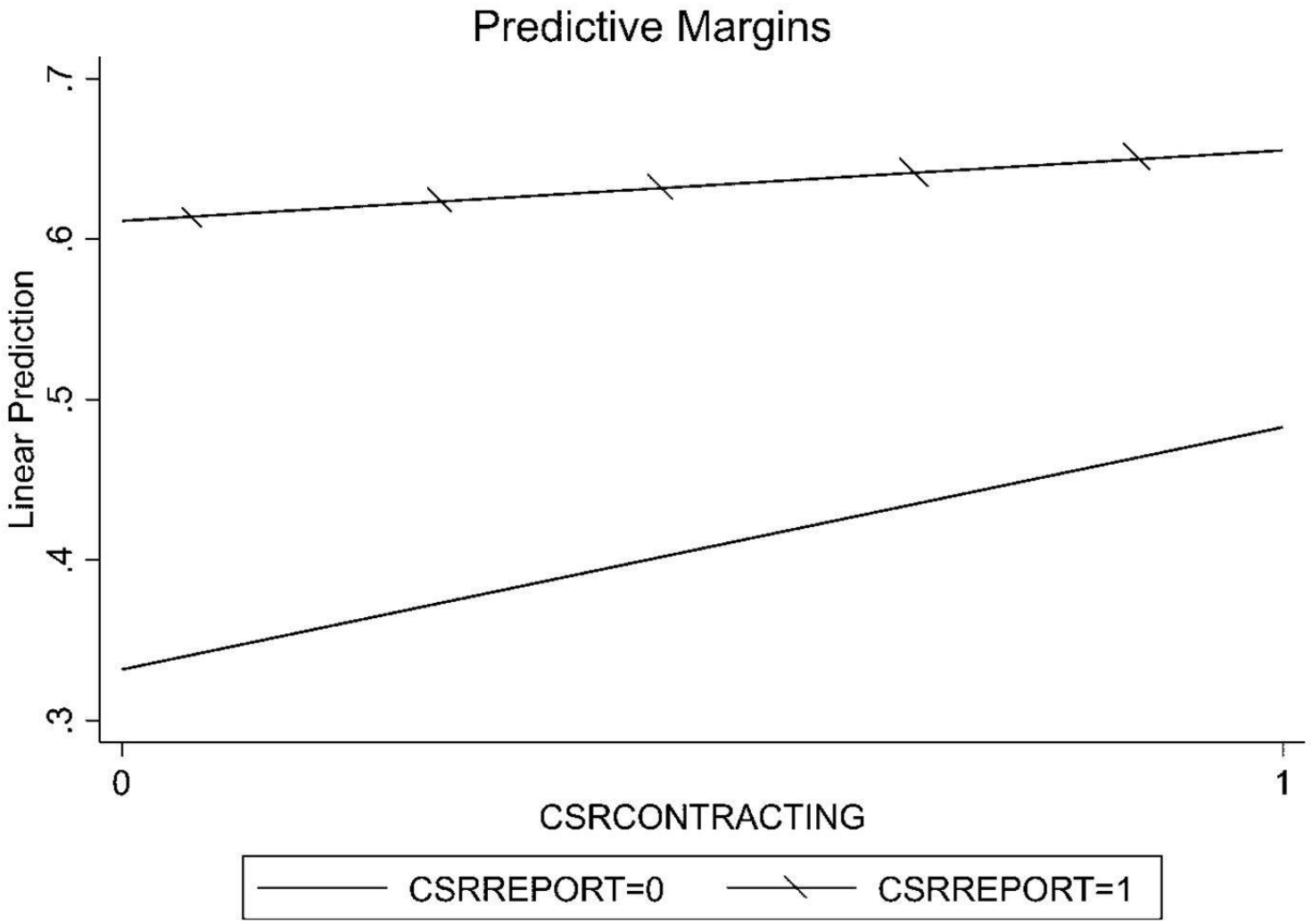


Figure 3. Graphical presentation of interaction relationship of CSR contracting and official CSR disclosure and its impact on CSP

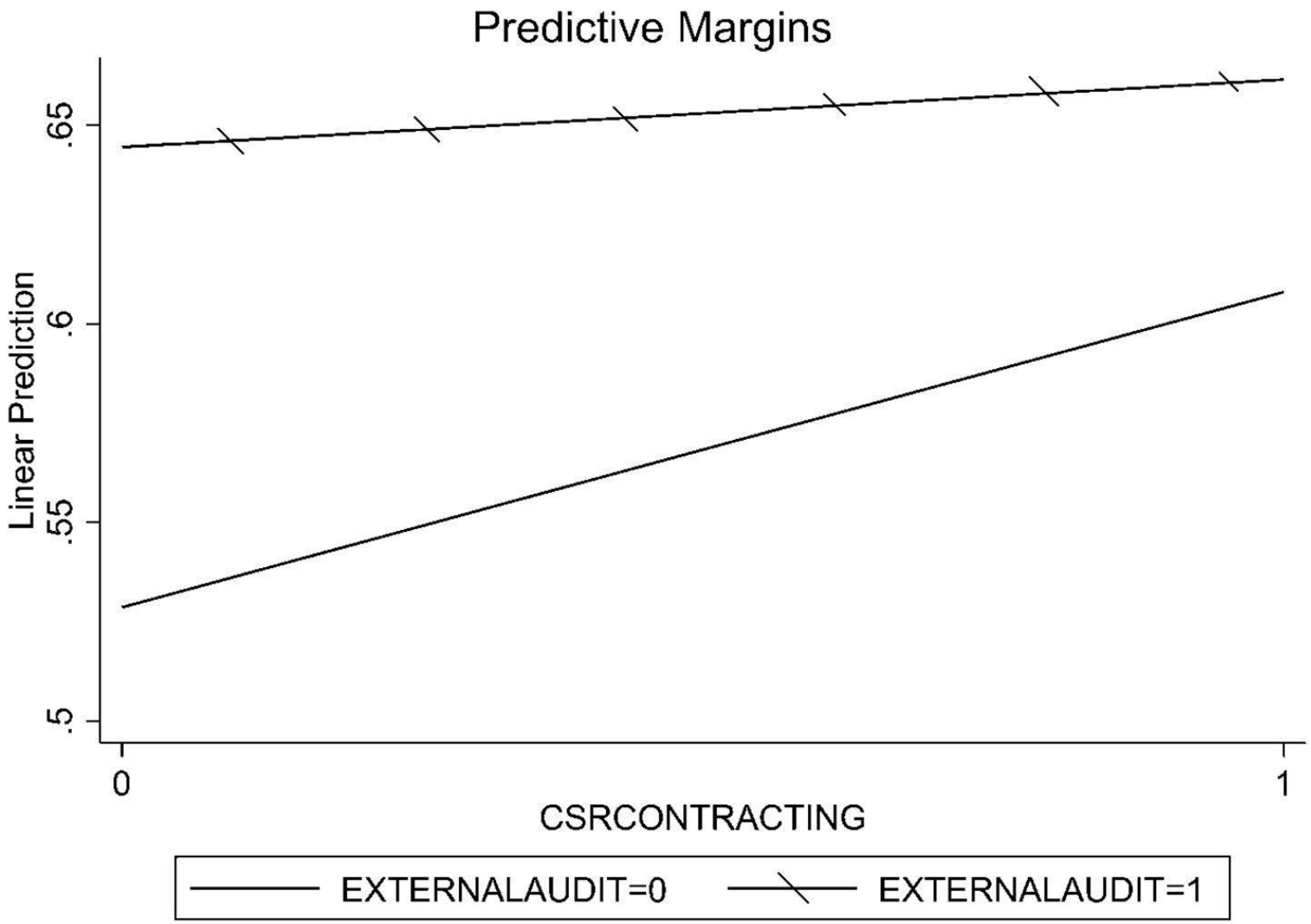


Figure 4. Graphical presentation of interaction relationship of CSR contracting and External audit for CSR report and its impact on CSP