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ABSTRACT

This dissertation is composed of three chapters focusing on sustainability and business. We study how customers and investors target firms that are not sustainable and how a female Chief Sustainability Officer (CSO) can be effective in leading firms' sustainability efforts. The first chapter unveils how customers react to sustainability misconduct. The authors conduct an event study of 504 observations, including firms judged guilty in the United States court of law in legal proceedings related to sustainability misconduct as well as their main competitors. Results show that sustainability misconduct erodes corporate reputation. The second chapter reveals the direct and dynamic impacts of a female CSO on firm performance. Analyzing 117 United States retailers in various industries, the authors find evidence that having a female CSO and that female CSO experience increases sales revenue growth. Finally, the third chapter focuses on investors and shows how CEO characteristics can moderate the effects of firm performance and sustainability performance on sustainability investor activism proposals.

Keywords: sustainability misconduct, firm exposure, corporate reputation, gender diversity, investor activism, CEO characteristics.

RESUMO

Esta dissertação é composta por três capítulos focados em sustentabilidade e negócios. Estudamos como clientes e investidores focam sua atenção em empresas que não são sustentáveis e como uma *Chief Sustainability Officer (CSO)* mulher pode ser eficaz na condução dos esforços de sustentabilidade das empresas. O primeiro capítulo revela como os clientes reagem a má conduta em sustentabilidade. Os autores realizaram um estudo de eventos com 504 observações, incluindo empresas consideradas culpadas em processos legais relacionados a má conduta em sustentabilidade nos tribunais dos Estados Unidos e os principais concorrentes dessas empresas. Os resultados mostram que a má conduta em sustentabilidade prejudica a reputação corporativa. O segundo capítulo revela os impactos diretos e dinâmicos de uma CSO mulher no desempenho da empresa. Analisando 117 varejistas dos Estados Unidos em diversos setores, os autores encontram evidências de que ter uma CSO mulher e uma com experiência contribuem para o crescimento da receita de vendas. Por fim, o terceiro capítulo foca nos investidores e demonstra como as características do CEO podem moderar os efeitos do desempenho da empresa e do desempenho em sustentabilidade nas propostas de ativismo sustentável de investidores.

Palavras-chave: má conduta em sustentabilidade, reputação corporativa, diversidade de gênero, ativismo do investidor, características do CEO.

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i. DISSERTATION OVERVIEW

This dissertation is about the relationship between sustainability and business. We follow the definition of sustainability created by Bansal (2005), which is structured around three principles: social equity, environmental integrity, and economic prosperity. Firms are key actors in the pursuit of sustainability (Kramer and Porter 2011; Carroll 2016; Hart and Milstein 2003) and their engagement is imperative for moving the sustainable development goals forward, helping fight climate change, reduce inequalities, end poverty, protect the planet, and make sure that all people have peace and prosperity (UN 2015). Consequently, firms have been integrating sustainability and financial goals, viewing them as complementary since achieving sustainability also enhances profits and growth (Vadakkapatt et al. 2021). Firms with good sustainability performance enjoy good economic results. On the other hand, firms that do not care about sustainability can be targeted by customers and investors.

Customers are increasingly concerned with sustainability, which influences their choices for sustainable consumption (White, Habib, and Hardisty 2019; Jansson et al. 2017; Jansson 2011). Moreover, if a firm neglects to act sustainably, its corporate reputation will be hurt (Flammer 2013) and repairing it may be difficult (Sims 2009). That is because customers will feel that the firm violated their trust and betrayed them (Kang, Slaten, and Choi 2021; Koehler and Gershoff 2003). We delve deeply into that in the first chapter, co-authored with Professors Danny Claro and Priscila Claro. We reveal that sustainability misconduct hurts corporate reputation, measured by firm exposure growth, and this effect is moderated by engagement with sustainability and sustainability transparency.

Another group of stakeholders who are also concerned about sustainability are investors. One mechanism used by investors to gain a firm's attention is investor activism proposals related

to sustainability concerns (Back and Colombo 2022; Yang, Uysal, and Taylor 2018). Evidence shows that this kind of activism improves sustainability performance (Grewal, Serafeim, and Yoon 2016; Diaz-Rainey et al. 2023). Therefore, the targets tend to be firms with poor sustainability performance. Also, investors will want to target firms that are capable of changing, consequently, they will choose firms with good prior financial performance. Additionally, other characteristics might influence the impact of firm performance and sustainability performance on sustainability investor activism proposals. Upper echelons theory posits that top management team characteristics will impact firm performance (Hambrick and Mason 1984). In that sense, CEO characteristics, such as gender, celebrity status, and political view, might also be important. We investigate those effects in the third chapter, co-authored with Professor Glen Dowell.

The other two chapters have established that firms should care about sustainability. To manage those efforts, it is important to have a leadership figure dedicated to sustainability: a Chief Sustainability Officer (CSO). These leaders formulate and execute firms' sustainability strategies (Miller and Serafeim 2014), and their responsibilities include prioritizing environmental, social, and financial needs (Velte and Stawinoga 2020). Some firms prefer to choose a female CSO since women are viewed as better than men at managing sustainability (Brough et al. 2016) and tend to make less risky decisions (Varma, Bommaraju, and Singh 2023), which is important considering sustainability is all about long-term matters. Another important characteristic a firm might look for in a female CSO is her experience. This is relevant due to her supply chain management experience (Ganesan et al. 2009), her ability to identify new sustainable products (White, Habib, and Hardisty 2019), her legacy thinking and care for future generations (Frumkin, Fried, and Moody 2012), and her risk aversion (Albert and Duffy 2012). Accordingly, firms should consider hiring an experienced female CSO. We develop a conceptual

framework and test empirically the impact of female CSO in the second chapter, co-authored with Professors Danny Claro and Priscila Claro. We unveil that female CSO and experienced female CSO have a positive sales growth performance effect. Also, they moderate the effects of retailer sustainability commitment on firm performance.

As the environmental and social challenges faced by humanity become increasingly pressing, the involvement of firms with the sustainability agenda is crucial. Both customers and investors are exerting growing pressure on firms to embrace these issues. As a result, to tackle those challenges, leadership is crucial and should have the right characteristics. CSOs should be female and have experience to be effective in addressing those tasks. Additionally, CEOs who are female, have greater celebrity status, and hold more liberal views might be more suitable to lead in the direction of this agenda. Having this in mind, firms will be in the right track for meeting stakeholders' expectations and helping achieve sustainability.

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1. CUSTOMER RESPONSES TO ENVIRONMENTAL AND SOCIAL MISCONDUCT

Abstract

Firms experience corporate reputation (CR) losses due to customer dissatisfaction with sustainability misconduct (SM). This study investigates how firms' engagement with sustainability and their level of sustainability transparency influence the impact of SM on firm CR losses. This speaks to the literature on marketing and business ethics that investigates factors that impact CR. The authors hypothesize that SM increases firm exposure growth (i.e., key CR loss metric), and such impact is contingent upon firms' level of engagement with sustainability and sustainability transparency. Engagement with sustainability enhances the main effect, and sustainability transparency diminishes it. The authors test the hypotheses and find empirical support by conducting an event study of 504 observations, including firms judged guilty in the United States court of law in legal proceedings related to SM and guilty firms' main competitors. The study contributes to the literature on marketing and business ethics by unveiling how CR suffers in face of firm SM. Additionally, engagement with sustainability makes firms more vulnerable to this effect while sustainability transparency makes firms more resilient.

Keywords: sustainability misconduct, firm exposure, corporate reputation, engagement with sustainability, sustainability transparency.

1.1 Introduction

Firms face great challenges in developing a positive corporate reputation due to the growing customer concerns about sustainability issues. Wolverine World Wide was found guilty of contaminating residential drinking water wells and the environment, so the firm had to pay \$69.5 million to extend municipal water to more than 1,000 properties (MIAG 2020). Also, Brinker International was convicted of sexual harassment with a fine of \$150,000. Between 2015 and 2017, five female servers and hostesses of a Chili's restaurant in Cañon City experienced sexual harassment, including frequent inappropriate remarks and suggestive comments. Chili management retaliated against some of those employees who complained about the situation, by taking measures such as reducing scheduled hours (EEOC 2020). We see news like this every day because firms become involved in sustainability misconduct (SM) (Walker, Zhang, and Ni 2019; Flammer 2013; Krüger 2015) that affect their corporate reputation (CR), damaging their ethics. However, there is no consensus on stakeholders' reactions to such SM as previous research shows conflicting results. Some studies show a negative impact reinforcing the idea that stakeholders do retaliate against such firms (e.g., Flammer 2013; Krüger 2015), while others show a positive impact or inconclusive results (e.g., Cheung 2011; Curran and Moran 2007).

Customers, including end consumers, customer firms, and governments, are a critical stakeholder group largely overlooked by previous studies in the context of SM (Walsh and Beatty 2007). Customers have become more aware of sustainability and consequently pressure firms to adopt sustainable practices (Adomako et al. 2023; BCG 2017), because firms are key actors in the pursuit of sustainable development (Schaltegger, Lüdeke-Freund, and Hansen 2012). This view of firms beyond the former restrictive profit-centered models can stimulate novel theorizing about how ethical their behavior is (Islam 2020). In response, firms strive to embrace sustainability initiatives (Ozkan, Temiz, and Yildiz 2023; Kramer and

Porter 2011; Carroll 2016), not only to gain efficiency in operations but also to add value to customers (Chandy et al. 2021; Rajan 2020). For firms, this is particularly relevant given the significant weight customers place on sustainability when assessing CR (Stanaland, Lwin, and Murphy 2011).

Given the challenges faced by firms, the objective of our study is to enhance the understanding of customer reactions to SM. More specifically, we observe how environmental and social misconduct affect firm exposure growth, a key measure of CR losses. To achieve this, we theoretically derive hypotheses and test them in an event study with 504 observations, where half have been judged guilty in the United States court of law in legal proceedings related to SM and the other half are those guilty firms' main competitors, as a contrafactual evidence. The SM-related data was collected from the watchdog Violation Tracker, the first wide-ranging database on corporate misconduct. The selected cases of SM represent lawsuits related to environmental or social violations, where environmental misconducts include air pollution, water pollution, and hazardous waste, and social misconducts include labor offenses, discrimination, and harassment. Our results unveil that SM increases firm exposure growth, engagement with sustainability enhances this effect, and sustainability transparency diminishes it.

We contribute to the theory in the fields of marketing and business ethics in three key ways. First, we reveal that SM affects CR by increasing firm exposure growth. To our knowledge, this is the first study to examine customer reactions to SM, as previous research has mainly focused on investors. Addressing this research gap, we demonstrate that following a case of SM, customers feel betrayed by the firm (Kang, Slaten, and Choi 2021), which damages CR (Flammer 2013) as it increases firm exposure growth. Second, we demonstrate that engagement with sustainability enhances the positive effect of SM on firm exposure growth. This occurs because such engagement raises customer expectations (Lii and Lee

2012). When firms violate these expectations through SM, customers blame the guilty firm (Lin-Hi and Blumberg 2018; Burgoon 1993), which diminishes CR by increasing firm exposure growth. Third, we show that sustainability transparency diminishes the positive effect of SM on firm exposure growth. Sustainability transparency is used to manage CR (Bebbington, Larrinaga, and Moneva 2008; Romero, Ruiz, and Fernandez-Feijoo 2019; Pham and Tran 2020). More specifically, it preserves CR during negative events (Zhang, Shan, and Chang 2021), such as SM, thus causing this reduced effect on firm exposure growth.

1.2 Firm Sustainability Efforts

1.2.1 Sustainability and Corporate Reputation

Sustainability has gained prominence for customers and firms alike. Sustainability was defined by Bansal (2005) as following three principles: social equity, environmental integrity, and economic prosperity. It has evolved into a multifaceted concept that have been changing overtime (Dyllick and Hockerts 2002). It initially gained more attention as Corporate Social Responsibility (CSR), which was defined by Carroll (1979, 2016) as the economic, legal, ethical, and philanthropic obligations of firms towards their environment. Nevertheless, the meaning of CSR is different for various audiences and has developed over the years (Voegtlin and Greenwood 2016). Then, the closely related concepts of Sustainable Value and Shared Value shed light on sustainability challenges of business, helping identify strategies to improve business outcomes and sustainable outcomes (Kramer and Porter 2011; Hart and Milstein 2003). However, the Shared Value concept has been criticized by Crane et al. (2014) due to its lack of originality and other issues. More recently, the concept of Environmental, Social, and Governance (ESG) emerged in the report “Who cares wins” and has become popular among a diverse set of stakeholders (UN 2004). From an overarching understanding, all these concepts are part of the construct of sustainability.

Stakeholders, such as customers, grant the firm the right to access resources (Borgstedt et al. 2019; Bansal and Kistruck 2006) and hold high expectations for responsible business practices (Hahn and Lülfes 2014) demanding firms to properly use the resources sustainably. Consequently, failure to meet these societal rules by not acting in a sustainable way undermines CR (Matejek and Gössling 2014), primarily because word-of-mouth serves as a catalyst (Sims 2009) in the process of impression management where CR is negotiated between the firm and its customers (Bansal and Kistruck 2006).

CR is a complex construct that have been widely researched in the business ethics literature (Zhang, Shan, and Chang 2021; Lin-Hi and Blumberg 2018; Pérez, García de los Salmones, and López 2015). It is characterized by causal ambiguity, social complexity, slow accumulation, and path dependence (De Castro, López, and Sáez 2006; Barney 1986). CR is formed by stakeholders according to the signals that can be received directly from the firm, by the media, or by stock markets (Brammer and Millington 2005). These signals often arise from triggering events that reflect a firm more visible action (Agarwal, Osiyevskyy, and Feldman 2015; Barnett, Jermier, and Lafferty 2006; Fombrun and Van Riel 2004), which result from management decisions (Hur, Kim, and Woo 2014). Those signals help stakeholders predict the probable outcomes of interacting with the firm, by allowing them to imagine what the firm can do and what it would likely do (Mishina, Block, and Mannor 2012). This process helps resolve the information asymmetry problem, which would otherwise obscure the firm's attributes (Wang and Berens 2015; Hsu 2012). Furthermore, CR helps firms differentiate themselves from competitors (Rhee and Valdez 2009). In that sense, CR is one of the most relevant intangible assets (Pérez, García de los Salmones, and López 2015), as it can be valuable, rare, inimitable, and non-substitutable: a sustainable competitive advantage (Agarwal, Osiyevskyy, and Feldman 2015; Barney 1991). Consequently, high CR

firms attract more customers (Walsh and Beatty 2007; Gardberg and Fombrun 2002; Groenland 2002).

In their seminal work, Fombrun and Shanley (1990) defined CR as the accumulated judgment of firms by stakeholders over time. However, it is important to specify which stakeholder group (Weiss, Anderson, and MacInnis 1999) since CR may vary significantly among them (Wang and Berens 2015; Szöcs et al. 2016). Therefore, in this paper, as previous research has (e.g. Szöcs et al. 2016; Weiss, Anderson, and MacInnis 1999; Walsh and Beatty 2007), we will focus on the most important one when it comes to CR: customers. In this context, a CR from the customer view has been defined as his or her overall evaluation of a firm regarding reactions to products, interactions with the firm, and known corporate activities (Walsh and Beatty 2007). CR exists in customers' minds, influences how they perceive the firm (Agarwal, Osiyevskyy, and Feldman 2015; Lii and Lee 2012; Keh and Xie 2009), evaluates product quality (Brammer and Millington 2005), define purchase intentions (Roberts and Dowling 2002), establish willingness to pay a premium price (Stuebs and Sun 2010), and constructs loyalty (Lii and Lee 2012).

Sustainability influences CR (Lii and Lee 2012), as customers increasingly demand that firms act sustainably to preserve their CR by being ethical. Consequently, firms should take the lead in pursuing sustainability and must reconnect business success with social progress (Kramer and Porter 2011). Given rising customers concern with social and environmental issues (Kotler 2011), firms should consider their interest and design sustainability-oriented strategies (Claro and Esteves 2021; Kramer and Porter 2011; Lopez 2020) and avoid the risk of engaging in SM. This is relevant as putting profit before principle will diminish CR (Hogarth, Hutchinson, and Scaife 2018; Atkins, Drennan, and Bates 2006; Williams and Barrett 2000), considering it takes years to construct a positive CR, but it can be destroyed easily (Sims 2009), because customers can change their evaluations about CR quite

significantly (Love and Kraatz 2009). Therefore, a reputation-damaging event, such as SM, will provoke negative reactions from customers (Rhee and Valdez 2009), impacting business ethics due to CR losses.

1.2.2 Sustainability Misconduct

Previous research has focused on stakeholder reactions to negative sustainability events. However, there are conflicting results. On the one hand, some authors did not find evidence that stakeholders care about excluding firms from a sustainability index. For example, Cheung (2011) studied a sample of US stocks from 2002 until 2008 and did not find strong evidence that the exclusion of firms from the Dow Jones Sustainability World Index (DJSWI) had an impact on stock returns. Also, studying including or excluding firms from the FTSE4Good UK Index, Curran and Moran (2007) did not find statistically significant results for investor reactions.

On the other hand, some authors found negative investor reactions to negative sustainability news and exclusions from a sustainability index. Studying the announcement of corporate news related to the environment for all the US publicly traded firms from 1980 to 2009, Flammer (2013) found that investors react negatively to the announcement of eco-harmful corporate events, but she did not test for negative social events. Studying negative CSR news, Krüger (2015) found that investors reacted negatively to them. Moreover, Adamska and Dąbrowski (2021) studied sustainability index changes from six countries with different risk levels and found that investors reacted negatively to index firm exclusions. Also, analyzing inclusions and exclusions from the Domini 400 Index, Becchetti et al. (2012) found that investors react negatively to exclusions. Finally, Capelle-Blancard and Laguna (2010) studied chemical disasters and found a negative reaction from investors. All previous research focus on investors and neglect the reactions of customers to such negative sustainability

incidents. Table 1 summarizes previous studies and highlights our contributions to the literature.

Previous research has analyzed factors influencing the relationship between SM and stakeholder reactions. Evaluating the institutional context, Adamska and Dąbrowski (2021) studied how the risk of the institutional environment is important. Focusing on firms' environmental characteristics, Flammer (2013) shows that firms' environmental performance and environmental concerns affect shareholders' reactions to eco-harmful events. Another approach was taken by Capelle-Blancard and Laguna (2010), who chose to focus on the misconduct, showing that its seriousness plays a role. However, previous research has failed to consider the impact of engagement with sustainability and sustainability transparency. These variables are important because they are relevant to customers and can change the way SM impacts firm exposure growth as key measure of CR.

In this study, we measure firm exposure growth as the difference of the score of interest for the firm on Google on the day of the conviction plus the 6 following days minus the 7 previous days with data from Google Trends. The score of interest is a number between 0 and 100 that shows the popularity of a search term (in our case, the name of the firm), which makes it comparable between firms. The idea is that the highest the firm exposure growth, the more the firm is exposed to customer scrutiny, so the more CR is lost. This is an important measure considering that firms are concerned about how they are perceived by their customers, to maintain their loyalty and purchase intentions.

TABLE 1
Event studies in sustainability and contribution of this paper

Reference	Discipline: Theory	Dimensions	Main Effects	Moderators	Financial performance	Data source and Period	Analytical Method	Key Findings
This study	Business Ethics: Corporate Reputation	Environmental and Social	- Sustainability Misconduct	- Engagement with Sustainability - Sustainability Transparency	Firm Exposure Growth	Violation tracker - 2020 until 2021	Regression	Customers react negatively to sustainability misconduct, increasing firm exposure growth. Engagement with sustainability and sustainability transparency moderate this effect.
Flammer (2013)	Strategy: Stakeholder	Environmental	- Negative environmental events - Positive environmental events	- Time - Environmental performance - Environmental concerns	Cumulative Abnormal Return	Corporate news - 1980 until 2009	Regression	Investors react negatively to environmental incidents and positively to eco-friendly initiatives. Time, environmental performance and concerns moderate those effects.
Krüger (2015)	Finance: Economic	Environmental and Social	- Dummies for Incident Classification - Firm' size	-	Cumulative Abnormal Return	Kinder, Lydenberg, and Domini database - 2001 until 2007	Regression	Investors respond strongly negatively to negative events and weakly negatively to positive events.
Adamska and Dąbrowski (2021)	Strategy: Stakeholder and Resource Based View	Environmental and Social	- Degree of market development - Legal system governing a given country	-	Cumulative Abnormal Return	Sustainability Index in six countries - 2009 until 2017	t-test	In markets with riskier institutional environments investors responded more strongly to company inclusions (positively) and exclusions (negatively) as compared to markets with lower-risk institutional environments.
Becchetti et al. (2012)	Strategy: Corporate social responsibility	Environmental and Social	- Additions to the index - Deletions from the index	-	Cumulative Abnormal Return	Domini 400 - 1990 until 2004	Regression	Investors react negatively to exclusions from the Domini index. The effect persists even after controlling for concurring financial distress shocks and stock market seasonality.
Capelle-Blancard and Laguna (2010)	Strategy: Stakeholder	Environmental	- Number of casualties - Toxic release	-	Cumulative Abnormal Return	Articles on chemical disasters - 1990 until 2005	Regression	Drop in firms market value of 1.3% over the two days immediately following the disaster. This loss is related to the seriousness of the accident as measured by the number of casualties and by chemical pollution.
Cheung (2011)	Business Ethics: Stakeholder	Environmental and Social	- Additions to the index - Deletions from the index	-	Cumulative Abnormal Return	Dow Jones Sustainability World Index - 2002 until 2008	t-test	No evidence that announcement of inclusions or exclusions from the Dow Jones Sustainability World Index has any significant impact on stock return or risk.
Curran and Moran (2007)	Strategy: Stakeholder	Environmental and Social	- Additions to the index - Deletions from the index	-	Abnormal Return	FTSE4Good UK Index - 2001 until 2005	t-test	No statistically significant effects.

1.3 Hypotheses: Sustainability Misconduct

Drawing on extant research, we propose a conceptual framework and specific hypotheses to predict the extent to which SM impact firm exposure growth, as well as how characteristics such as engagement with sustainability and sustainability transparency can either diminish or enhance such effects. This parsimonious framework is presented in Figure 1 and the main argument for our hypotheses are summarized in Table 2.

Customers are increasingly concerned with sustainability (White, Habib, and Hardisty 2019; Jansson et al. 2017; Jansson 2011). To address this, firms should scale up positive sustainability impacts and reduce or avoid negative ones, considering that the internalization of negative sustainability impacts protects CR (Kramer and Porter 2011; Hart and Milstein 2003; Claro and Esteves 2021), especially given the link between customer satisfaction and CR (Bear, Rahman, and Post 2010). As a result, customers' perception of a firm's sustainability is positively related to perceived CR (Stanaland, Lwin, and Murphy 2011).

If companies neglect to adhere to sustainable practices, they are likely to damage their CR. Once CR is hurt, repairing it may be a challenging task for firms (Sims 2009) since its related to business ethics. This challenge stems from the fact that customers will feel betrayed by the firm after SM (Kang, Slaten, and Choi 2021). The feeling of betrayal can be defined as the perception of deceit felt by customers when they believe that a firm violated their trust (Koehler and Gershoff 2003). Trust is a key factor in customers' loyalty to the brand (Herbst et al. 2012; Chaudhuri and Holbrook 2001; Sirdeshmukh, Singh, and Sabol 2002), as loyalty is based on the process of maintaining important and valuable relationships that are created through trust (Chaudhuri and Holbrook 2001; Moorman, Zaltman, and Deshpand 1992), an essential element in the construction of a marketing relationship with quality (Herbst et al. 2012; Morgan and Hunt 1994; Urban, Sultan, and Qualls 2000). That is why SM will generate CR losses among customers (Flammer 2013).

FIGURE 1
Conceptual Framework

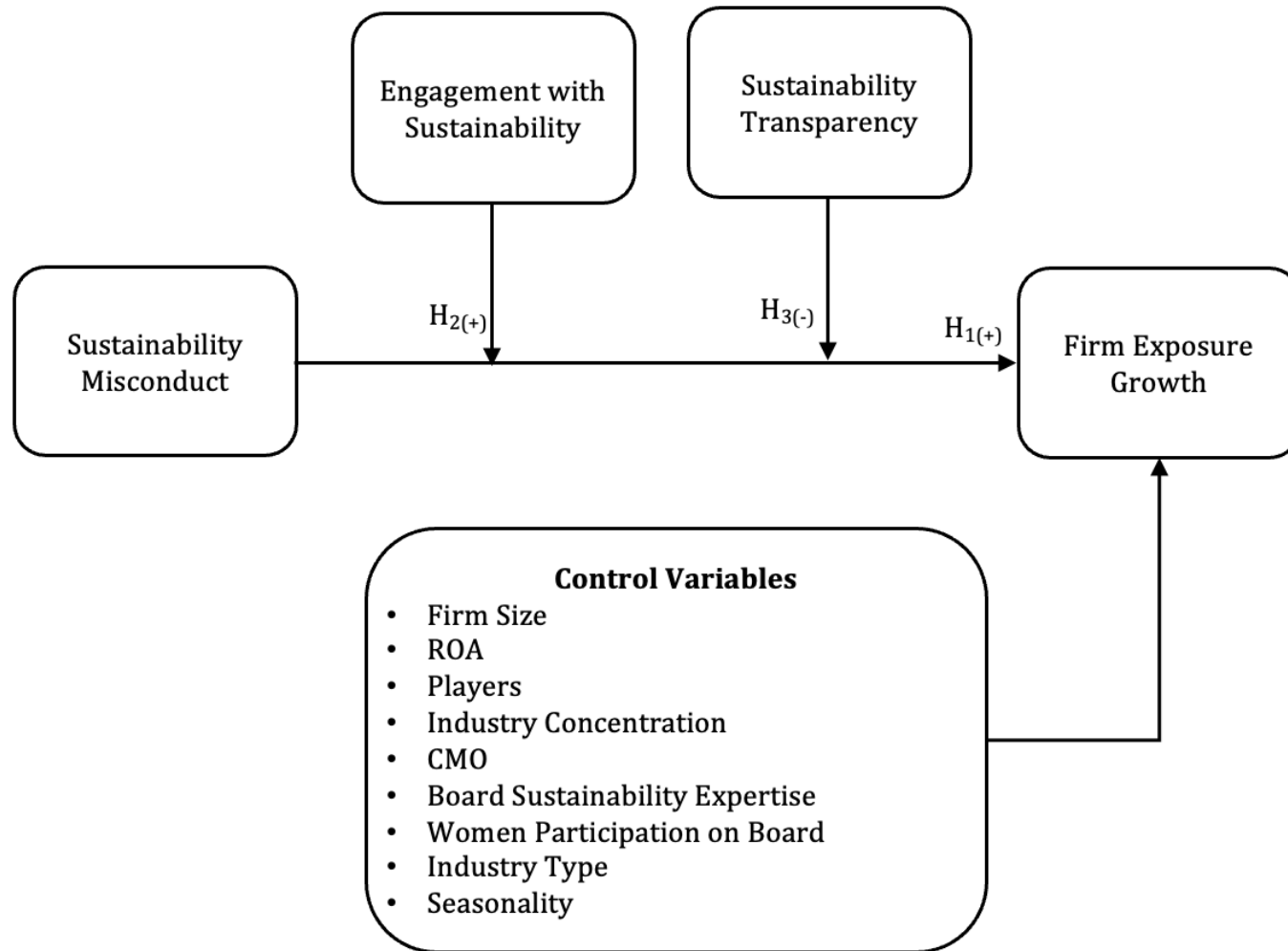


TABLE 2
Hypotheses

Hypotheses	Main arguments
H1: Sustainability misconduct increases firm exposure growth.	<ul style="list-style-type: none"> - Customers will feel betrayed by the firm after sustainability misconduct. - Trust is a key factor in customer loyalty. - Sustainability misconduct generate corporate reputation losses with customers. - Consequently, firm exposure growth will increase.
H2: Engagement with sustainability enhances the positive effect of sustainability misconduct on firm exposure growth.	<ul style="list-style-type: none"> - Customers create a positive social identity when interacting with firms that are engaged with sustainability. - This makes them create expectations about the firm. - When those expectations are violated by sustainability misconduct, customers will focus their attention on the guilty firm. - Therefore, corporate reputation will be hurt and firm exposure growth will increase.
H3: Sustainability transparency diminishes the positive effect of sustainability misconduct on firm exposure growth	<ul style="list-style-type: none"> - Since it is not mandatory for firms to disclose sustainability information, it sends good signals to customers. - Sustainability transparency has an insurance-like role by protecting corporate reputation during negative events like sustainability misconduct. - Hence, the impact of firm exposure growth will be diminished.

For example, Matejek and Gössling (2014) studied the case of BP in 2010. Following the catastrophic explosion of the Deepwater Horizon oil platform that resulted in fatalities and environmental impacts, the firm failed to fulfill its responsibilities to stakeholders, including customers, which was perceived as unethical and triggered a big CR crisis. We argue that such cases of SM leave customers dissatisfied and eager to understand the event, prompting them to search for more information about the SM online, often through Google, thereby leading to negative CR by increasing firm exposure growth.

H1: Sustainability misconduct increases firm exposure growth.

Firms want to show to customers their engagement with sustainability. One way in which they can accomplish that is by becoming a signatory of the Global Compact, which is the largest corporate sustainability initiative in the world and consists of a call for firms to align their strategies and operations with sustainability (GC 2024). Customers value sustainability (Adomako et al. 2023; BCG 2017). Therefore, considering that trust has its foundation in the personal values of customers, how they perceive a firm's engagement with

sustainability can influence their perception of the firm trustworthiness, considering this alignment between the firm's actions and their own beliefs and preferences (Hur, Kim, and Woo 2014). Consequently, customers create a positive social identity due to a sense of connection and belonging and develop high expectations for such firms, believing they will fulfill their promises and remain sustainable (Lii and Lee 2012). Expectations help customers predict a firm's behavior in specific situations or adherence to social norms. However, when expectations are noticeably violated, such as in a case of disclosed SM, they can induce customers to think that the firm is being unethical by engaging in *greenwashing* or *wokewashing*. Also, this breach of trust will trigger psychological arousal, and make customers focus attention on the guilty firm (Lin-Hi and Blumberg 2018; Burgoon 1993), hurting CR by increasing firm exposure growth.

For example, Volkswagen used to be known for its engagement with sustainability, and it was even a part of a sustainability index in the past. However, in the "Dieselgate" scandal in September 2015, the Environmental Protection Agency (EPA) accused the firm of a Clean Air Act violation. Volkswagen installed defeat devices, in approximately 590,000 vehicles from 2009 to 2016, that rendered inoperative, defeat, or bypass a required element of a vehicle's emission control system. The firm had to pay \$25 Billion (EPA 2024; Fortune 2018). Misleading customers, by pretending the car was less polluting than it really was, denied them the opportunity to make a better choice for the environment. Additionally, those vehicles lost value and customers lost money on resale (EU Consumers 2021). This example illustrates how a firm that is engaged with sustainability, after involvement in SM, an unethical behavior, will suffer even greater CR losses by increasing even more firm exposure growth.

H2: Engagement with sustainability enhances the positive effect of sustainability misconduct on firm exposure growth.

Sustainability transparency through reporting is not a new practice: firms have been disclosing environmental and social information since the 1960s and 1970s but has become more common in recent years (Pérez-López, Moreno-Romero, and Barkemeyer 2015; Roca and Searcy 2012). Through time, firms are growing increasingly conscious of their responsibilities to society and the environment and use reports as a sustainability behavior communication tool (Reber, Gold, and Gold 2022; Romero, Ruiz, and Fernandez-Feijoo 2019). Sustainability transparency is particularly important because customers face challenges in identifying sustainable firms due to information asymmetries (Minutolo, Kristjanpoller, and Stakeley 2019).

Since sustainability reports are not mandatory, they serve as a signal that a firm is a good corporate citizen—accountable, transparent, and aligned with customer values (Pérez, García de los Salmones, and López 2015; Zhang, Shan, and Chang 2021; Minutolo, Kristjanpoller, and Stakeley 2019). Hence, sustainability transparency can be viewed as an impression management technique used for CR management and enhancement (Bebbington, Larrinaga, and Moneva 2008; Romero, Ruiz, and Fernandez-Feijoo 2019; Pham and Tran 2020). More specifically, sustainability transparency has an insurance-like role by protecting CR during negative and unethical events (Zhang, Shan, and Chang 2021), such as SM, thereby mitigating the impact on firm exposure growth.

H3: Sustainability transparency diminishes the positive effect of sustainability misconduct on firm exposure growth.

1.4 Method

1.4.1 Data

The studied cases of SM (or events) are penalty decisions where firms are judged guilty in lawsuits in the United States related to environmental or social misconduct. We

collected 252 cases of SM in 2020 and 2021 from the watchdog Violation Tracker, which is the first wide-ranging database on corporate misconduct. We selected cases of misconduct in two offense groups that were most related to the environmental and social dimensions of sustainability, namely “environment-related offenses” and “employment-related offenses”. We also collected data from the main competitor of each firm involved in each case of SM.

We used the penalty decision date in the lawsuit as the SM date because several cases occurred over a long period, and it was impossible to know their precise dates. By using the penalty decision in the lawsuit, we capture the moment when the SM becomes more salient for customers who become aware of those cases. Also, most of the studied cases of SM (84%) are from the COVID-19 pandemic period. We chose this period because this pandemic changed many aspects of the relationship between customers and firms. Customers spent more time online than ever. For example, in the US people used to spend 12 hours a day online before the pandemic and this number rose to 16 hours a day after the pandemic (Wolf 2020). During this time, customers were exposed to multiple positive and negative news regarding firms on social media and online news. In that context, investment in customer relations became even more strategic for firms (Cheema-Fox et al. 2020). Also, they were able to search more frequently on Google about the guilty firms, impacting firm exposure.

1.4.2 Study Measures

For all variables, we collected additional data for each of the firms responsible for the 252 cases of SM in our sample, as well as for each of those firm’s main competitor (our matching approach will be detailed in the “Addressing Endogeneity” section below). To measure our dependent variable, *Firm Exposure Growth*, we calculated the difference of the score of interest for the firm on Google on the day of the conviction plus the 6 following days minus the 7 previous days, we used data from Google Trends.

As for the independent variable, *Sustainability Misconduct* is a dummy that assumes 1 for firms that become involved in a case of SM and 0 for their main competitor. The first moderator, *Engagement with Sustainability* measures how engaged the firm is with environmental and social issues and it is measured as the number of years the firm has been a signatory of the Global Compact. The second moderator, *Sustainability Transparency* shows how much the firm discloses sustainability-related information to stakeholders. It was measured using Bloomberg's ESG Disclosure Score: a proprietary Bloomberg score from 0.1 to 100 based on Environmental, Social, and Governance (ESG) disclosure. Each ESG component (environmental, social, and governance) is equally weighted in the calculation of Bloomberg's score. It signals to the market the level of sustainability disclosure of the firm (Minutolo, Kristjanpoller, and Stakeley 2019).

We included control variables to increase the reliability of our estimates. All data are from the year of the firm (or main competitor) conviction. To account for size effects, we included *Firm Size* measured as the ln of firm assets, collected from Bloomberg. To take into consideration profitability, we included *ROA*, which is the firms' net income divided by total assets, from Bloomberg. Next, we included two control variables to account for competition in the industry. *Players* represent the number of players in a given market, from Bloomberg, and *Industry Concentration* indicates the degree of concentration of a market and is calculated using the Herfindahl–Hirschman Index with data from Compustat. *CMO* was included to account for marketing leadership in the firm. It is a dummy that assumes 1 if the firm has a Chief Marketing Officer (CMO) and 0 otherwise. Two control variables related to the firms' board composition were included. We gathered the names of board members from the EDGAR database or firms' websites. To construct the *Board Sustainability Expertise* variable, we looked at the EDGAR database or board members' LinkedIn profiles and selected one other firm where this board member was working for, either as an executive or

board member. Next, to address whether those firms were sustainability references, we proceed to see if those other firms were signatories of the Global Compact or in the Dow Jones Sustainability World Index. Finally, we constructed an index dividing the number of board members working in firms that were sustainability references by the total of board members. Our other board-related variable is *Women Participation on Board*. For each board member, we accessed the gender from the EDGAR database and board members LinkedIn by looking at the profile photograph and the pronouns (no board members in our database used gender-neutral pronouns). We proceeded to construct a dummy variable that assumes 1 for women and 0 for men. Finally, we calculated the percentage of women on the board to use as our measure. Seasonality was accounted for by including a set of three dummy variables to represent the four quarters of the year. We also included dummy variables for industry type based on aggregations from Bloomberg, as a set of three dummy variables representing three types of industries: consumers, services, and industrials, which are aggregations based on Bloomberg's classification. All construct definitions, measures, and data sources are summarized in Table 3. Descriptive statistics and correlations are in Table 4.

TABLE 3
Construct Definitions and Measures

Variable	Definition	Measure	Data Source
Dependent Variables			
Firm Exposure Growth	How exposed the firm is online before and after the sustainability misconduct.	Score of interest for the firm on Google on the day of the conviction plus the 6 following days minus the 7 previous days.	Google Trends
Main effects			
Sustainability Misconduct	Indicates which firms are involved in negative sustainability incidents.	Dummy variable that assumes 1 for the firms that got involved in the incident and 0 for their main competitor.	Violation Tracker
Engagement with Sustainability	Degree of firms' engagement with environmental and social issues.	Number of years the firm has been a signatory of the Global Compact.	Global Compact
Sustainability Transparency	Shows how transparent the firm is regarding sustainability matters.	ESG Disclosure Score.	Bloomberg
Controls			
Firm Size	Size of the firm.	Ln of firms assets.	Bloomberg
ROA	Return over Assets.	Net income divided by total assets.	Bloomberg
Players	Fierceness of the competition due to the number of players in the market.	Number of players in a given market.	Bloomberg
Industry Concentration	Shows the degree of concentration of a market.	Herfindahl–Hirschman Index.	Compustat
CMO	Indicates if the firm has a CMO.	Dummy that assumes 1 for firms that have a CMO and 0 for others.	
Board Sustainability Expertise	Indicates the expertise of the board on sustainability.	Percentage of board members that participate on another board of a firm that is either on the Global Compact or on the Dow Jones Sustainability World Index.	EDGAR database, firm website, LinkedIn, Global Compact and Dow Jones Sustainability World Index
Women Participation on Board	Gender diversity of the board.	Percentage of women on the board.	EDGAR database or firm website
Seasonality	Seasonality of the market.	Set of three dummy variables for three quarters of the misconduct date.	Violation Tracker
Industry Type	Industry type of each firm.	Set of three dummy variables representing four types of industries, that are aggregations based on Bloomberg's classification.	Bloomberg

TABLE 4
Descriptive

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
1 Firm Exposure Growth	-4.227	64.478	1																	
2 Sustainability Misconduct	.500	.500	.095	1																
3 Engagement with Sustainability	.591	2.365	.019	.210	1															
4 Sustainability Transparency	35.542	2.520	-.004	.175	.330	1														
5 Firm Size	7.404	3.610	-.001	.035	.182	.680	1													
6 ROA	.308	31.553	.045	-.048	.043	-.009	-.039	1												
7 Players	16.821	2.287	.060	.000	.044	-.013	.004	-.023	1											
8 Industry Concentration	.332	.274	-.006	.024	.167	.066	.063	.006	-.110	1										
9 CMO	.554	.498	.017	.180	.081	.240	.220	.012	-.069	.079	1									
10 Board Sustainability Expertise	.051	.087	.050	.106	.345	.170	.143	.066	.017	.050	.018	1								
11 Women Participation on Board	.233	.137	.018	.124	.144	.188	.075	.115	.063	-.010	.044	.164	1							
12 Industrials Industry	.268	.443	.224	.004	-.104	-.060	-.102	-.067	.069	-.153	.205	-.094	-.245	1						
13 Services Industry	.165	.371	-.048	.016	.118	-.027	.085	.024	.196	-.259	.054	.089	.123	.269	1					
14 Consumer Industry	.262	.440	-.022	.009	-.015	.008	-.001	.070	-.152	.289	.136	-.038	.111	.360	.264	1				
15 Q1	.329	.470	-.008	.000	-.050	-.065	-.238	-.023	-.042	-.031	.033	-.005	.019	.023	.061	.063	1			
16 Q2	.214	.411	.038	.000	-.032	-.052	.057	.008	-.042	.032	.031	-.052	-.061	.034	.102	.041	.366	1		
17 Q3	.246	.431	-.073	.000	.089	.022	.084	-.008	.019	.007	.034	.006	-.043	.050	.082	.120	.400	.298	1	

Notes: For correlation between two dummy variables we used Cramer's V and for correlation between dummy and continuous we used point-biserial correlation.

1.4.3 Addressing Endogeneity and Analytical Procedure

There is a potential endogeneity issue in the model as there could be other factors influencing firm exposure growth and SM at the same time. To address this issue, we used a matching approach by making sure that treated and control groups are comparable (Rawley and Seamans 2020; Zervas, Proserpio, and Byers 2017; De Figueiredo, Meyer-Doyle, and Rawley 2013). Therefore, for each firm guilty of SM in our sample, we used Bloomberg's peer function to identify its competitors. After that, we collected sales revenue data for the firm guilty of SM and each of its competitors in the year of the SM. Finally, we chose the main competitor as the one who had the closest sales revenue. We included the data for all the main competitors for the same period of the SM of the guilty firm in the database.

To test our hypotheses, the following models were estimated using panel data with random effects for firm (Eq. 1 and 2).

$$\begin{aligned} & Firm_Exposure_Growth_i \\ &= \beta_0 + \beta_1 Sustainability_Misconduct_i \\ &+ \beta_2 Engagement_with_Sustainability_i \\ &+ \beta_3 Sustainability_Transparency_i + Controls + \varepsilon_i \end{aligned}$$

(1)

$$\begin{aligned} & Firm_Exposure_Growth_i \\ &= \beta_0 + \beta_1 Sustainability_Misconduct_i \\ &+ \beta_2 Engagement_with_Sustainability_i \\ &+ \beta_3 Sustainability_Transparency_i \\ &+ \beta_4 Sustainability_Misconduct_i * Engagement_with_Sustainability_i \\ &+ \beta_5 Sustainability_Misconduct_i * Sustainability_Transparency_i \\ &+ Controls + \varepsilon_i \end{aligned}$$

(2)

1.5 Results

1.5.1 Main Results

The results are presented in Table 5 displaying Model 1 with main effects and controls and Model 2 including the interaction terms. In Model 1, H1 was supported ($\beta = .222, p < .01$), showing that *Sustainability Misconduct* increases *Firm Exposure Growth* harming CR. This hints that customers do punish firms that do not act sustainably, which is related to the work of Matejek and Gössling (2014) who studied the emblematic case of BP in the Gulf of Mexico and found that getting involved in such a SM caused this firm to damage its CR.

TABLE 5
Results: Impact of Sustainability Misconduct for Costumers

Variable	Firm Exposure Growth	
	Model 1	Model 2
Main effects		
Sustainability Misconduct	H ₁ .222 (.031)**	.297 (.039)**
Engagement with Sustainability	.241 (.018)**	.265 (.019)**
Sustainability Transparency	-.076 (.026)**	-.029 (.029)
Moderations		
Sustainability Misconduct*Engagement with Sustainability		H ₂ -.183 (.055)**
Sustainability Misconduct*Sustainability Transparency		H ₃ -.171 (.072)*
Controls		
Firm Size	.026 (.017)	.025 (.016)
ROA	.206 (.049)**	.206 (.048)**
Players	.018 (.020)	.021 (.020)
Industry Concentration	-.023 (.060)	.003 (.059)
CMO	.001 (.024)	.003 (.024)
Board Sustainability Expertise	-.018 (.026)	-.013 (.026)
Women Participation on Board	-.012 (.042)	-.001 (.041)
Industrials Industry	.152 (.069)*	.153 (.068)*
Services Industry	.008 (.067)	.029 (.066)
Consumer Industry	.071 (.067)	.070 (.066)
Q1	.005 (.008)	.005 (.007)
Q2	.007 (.007)	.007 (.007)
Q3	.000 (.007)	.000 (.007)
Intercept	.044 (.058)	.054 (.057)
Observations	504	504

* $p < .05$.

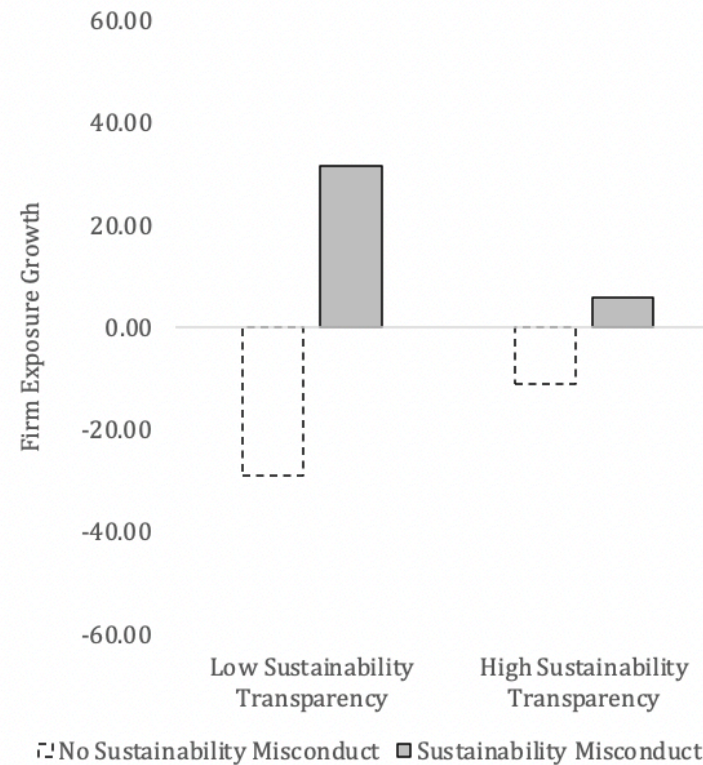
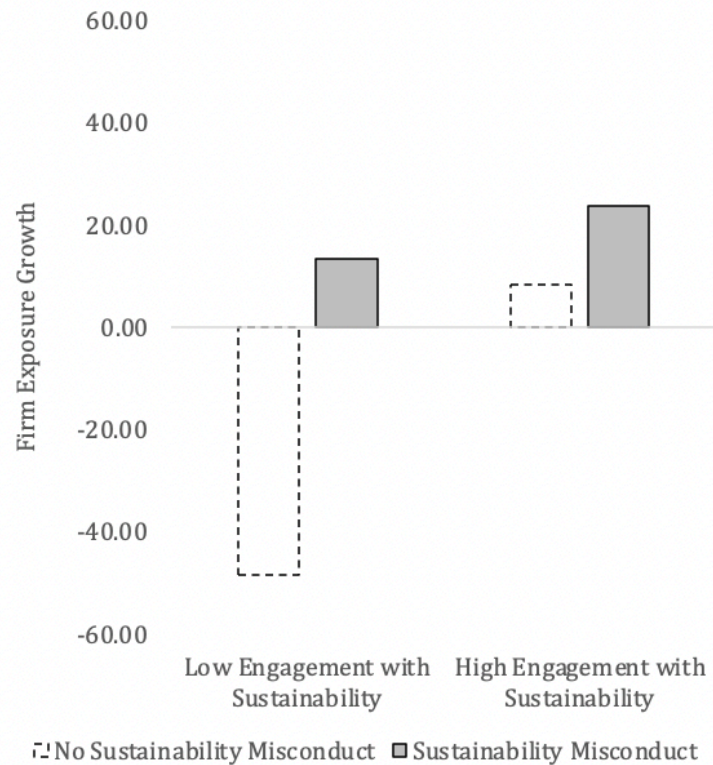
** $p < .01$.

Notes: Models are estimated in a panel with random effects. All variables are standardized. Standard error reported in parentheses.

FIGURE 2
Contingent Effect

A: Misconduct x Engagement with Sustainability

B: Misconduct x Sustainability Transparency



Notes: plotted using one standard deviation.

Engagement with Sustainability amplifies the positive effect of *Sustainability Misconduct* on *Firm Exposure Growth* since H2 was supported ($\beta = -.183, p < .01$). H3 was supported ($\beta = -.171, p < .05$), indicating that *Sustainability Transparency* diminishes the positive effect of *Sustainability Misconduct* on *Firm Exposure Growth*.

1.5.2 Graphical Analysis

To illustrate the moderation effects of *Engagement with Sustainability* and *Sustainability Transparency* on the influence of *Sustainability Misconduct* on *Firm Exposure Growth* we conducted graphical analysis. Figure 2 shows two graphs using the +1 and -1 standard deviation from the mean to make comparisons. In Panel A, our results demonstrate that among firms that experience *Sustainability Misconduct*, those with high *Engagement with Sustainability* experience 77% higher *Firm Exposure Growth* than those with low *Engagement with Sustainability*. These results are in line with previous literature arguing that in cases where customers' expectations are violated, psychological arousal can be triggered, inducing them to concentrate their attention on the guilty firm (Lin-Hi and Blumberg 2018; Burgoon 1993). Additionally, in Panel B, our study unveils that among firms that experience *Sustainability Misconduct*, those with high *Sustainability Transparency* experience 82% lower *Firm Exposure Growth* than those with low *Sustainability Transparency*. This speaks to previous authors who argued that sustainability transparency acts as an insurance mechanism for CR during a crisis (Zhang, Shan, and Chang 2021).

1.6 Discussion

1.6.1 Theoretical Contributions

Our study contributes to the marketing and business ethics literatures in three ways. First, we show that customers care about environmental and social issues to hold firms accountable for not paying attention to them. Our findings unveil that when firms act unethically by engaging in SM, this will elicit tangible reactions from customers. We further add to the literature that found negative investor reactions to negative sustainability events (Flammer 2013; Krüger 2015; Adamska and Dąbrowski 2021; Becchetti et al. 2012; Capelle-Blancard and Laguna 2010), by showing that customers react negatively to SM. Specifically, customers will experience a feeling of betrayal by the firm after the SM (Kang, Slaten, and Choi 2021), causing CR to suffer (Flammer 2013) and their online searching behaviors to intensify as a response.

Second, we demonstrate that engagement with sustainability enhances the positive effect of sustainability misconduct on firm exposure growth. By being engaged with sustainability firms signal to customers that this commitment will persist in the future, fostering high expectations from them (Lii and Lee 2012). However, when those firms are unethical by engaging in SM and it becomes visible to customers, it risks eroding their trust. Such actions can trigger negative emotions, leading to increased attention and scrutiny on the offending firm (Lin-Hi and Blumberg 2018; Burgoon 1993), which hurts CR as it increases firm exposure growth.

Third, we reveal that sustainability transparency diminishes the positive effect of sustainability misconduct on firm exposure growth. Due to information asymmetries, it is hard for customers to identify sustainable firms, underscoring the importance of sustainability transparency (Minutolo, Kristjanpoller, and Stakeley 2019). Therefore, firms can leverage sustainability transparency as an impression management technique to manage CR (Bebbington,

Larrinaga, and Moneva 2008; Romero, Ruiz, and Fernandez-Feijoo 2019; Pham and Tran 2020). It works because sustainability transparency works like insurance that safeguards CR during negative events (Zhang, Shan, and Chang 2021), like SM, mitigating its impact on firm exposure growth.

1.6.2 Managerial Implications

This study offers three implications for practice. First, firms must adopt a proactive approach to the sustainability agenda to avoid engaging in cases of SM that will severely damage their CR. This occurs because firms must prioritize their environmental and social performance to maintain a good relationship with customers, as they will factor that into how they perceive the firm. A failure to act sustainably not only erodes CR but also leads to heightened firm exposure growth as customers scrutinize the firm more intensively. This highlights the importance of embedding sustainability principles across the firm to preempt ethical lapses.

Second, the above-described customer reaction will be intensified if the firm has a high engagement with sustainability. Customers expect these firms to “walk the talk” by maintaining consistent alignment with their sustainability goals. Any divergence from these expectations, such as SM, can be perceived as *greenwashing* or *wokewashing* and lead to a sense of betrayal, triggering negative emotions and increasing scrutiny. Managers in firms with high engagement with sustainability should be vigilant to ensure all actions and communications align with their sustainability commitments, as inconsistencies may exacerbate CR damage.

Third, firms should prioritize sustainability transparency by disclosing high-quality, credible information about their environmental and social performance, as this will improve the relationship between firms and customers. Sustainability transparency not only reduces information asymmetries but also strengthens customer trust. This trust fosters deeper

connections with customers and acts as a protective mechanism for CR in cases of SM.

Managers should view sustainability transparency as a strategic tool for relationship building and risk mitigation, ensuring that disclosures are authentic, consistent, and reflect genuine commitments to sustainability.

1.6.3 Public Policy Implications

Our findings have several important implications for public policy aimed at addressing SM and promoting ethical firm behavior. First, legal frameworks surrounding SM should be strengthened to ensure more rapid legal proceedings and impose higher fines on offending firms. Expedited sentences and higher penalties would increase the deterrence effect and signal to firms that unethical practices come with significant consequences. If as a society we aim to achieve the Sustainable Development Goals, we must do our best to avoid SM (Heim and Mergaliyeva 2024). Also, we must make sure that all stakeholders, including customers, became aware of what happens.

Second, in that direction, public communication of SM cases must be prioritized to ensure transparency and customer awareness. Policies should mandate that all confirmed cases of SM are widely disseminated through various media channels to ensure customers are well-informed. Therefore, they will be able to make informed choices when deciding on which products to buy (White, Habib, and Hardisty 2019). Amplified visibility of SM cases would also incentivize firms to adopt proactive sustainability measures to avoid reputational damage.

Finally, laws on sustainability disclosure should be revised and made stricter. While our study focuses on SM cases where firms were found guilty in legal proceedings, numerous unethical practices fall within legal gray areas and are not explicitly prohibited by law. Policies should require firms to provide good quality disclosures of their sustainability practices,

including both positive and negative impacts. Furthermore, policymakers should consider mandating third-party audits to verify sustainability claims, thereby reducing *greenwashing* and *wokewashing*, increasing trust in disclosed information.

1.6.4 Limitations and Future Research

Future research could go in many directions. First, one limitation of our study is its exclusive focus on negative events: SM. Other authors could also study the reactions of customers to positive sustainability-related events. While previous studies have investigated positive events, they primarily focused on index additions rather than good sustainability initiatives.

Second, our study limits its focus to the United States. Future studies could try to answer the research question in other countries where customers have a different levels of sustainability activism and see if the conclusions would hold. In the United States, where sustainability has been a prominent topic for some time, customers are likely more engaged with it. In contrast, the dynamics in countries where sustainability is not so prioritized may differ, offering valuable insights into how cultural and institutional contexts shape customer reactions.

Third, we focus on one group of stakeholders: customers. The reactions of other groups of stakeholders to SM could also be studied. For example, it would be interesting to understand the reactions of employees to such SM, given the growing importance of sustainability considerations in employer selection and workplace satisfaction. Fourth, we do not study sustainability governance. The impact of having a sustainability executive, such as a chief sustainability officer, a sustainability director, or a sustainability vice president, on firms' results could be studied. The idea is that having this executive would allow firms to better focus on sustainability actions and avoid SM.

Fifth, we do not explore the psychological mechanisms that explain customer reactions to SM. Consumer behavior authors could conduct an experiment to measure feelings of betrayal, anger or disillusionment. Sixth, authors could explore SM cases not punishable by law. There are SM situations that follow on gray areas that are not regulated by law but could be available on the news or social media and it could be interesting to delve deeper into that.

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2. DIRECT AND DYNAMIC IMPACTS OF FEMALE CHIEF SUSTAINABILITY OFFICER ON RETAILER PERFORMANCE

Abstract

A growing number of retailers have appointed a female chief sustainability officer (CSO) and made their sustainability commitment public. Upper echelons theory (UET) postulates the importance of top management team members' gender; however, no previous research has investigated the direct and dynamic performance impacts of a female CSO. The authors hypothesize that retailers with a female CSO, and with an experienced one, will achieve superior performance. Also, such a CSO directly and dynamically moderates the effects of retailer sustainability commitment. Using unique secondary data from multiple sources on 117 United States retailers in various industries, the authors find evidence to support the hypotheses. The authors contribute to retailing practice and literature by unveiling the critical direct and dynamic role of the female CSO in the retailing industry. The findings reveal that a female CSO has a positive sales growth performance effect. The negative performance effect of a public commitment of a materiality assessment is diminished by female CSO, due to the focus on stakeholders. The positive performance effect of a sustainability future vision is enhanced by female CSO experience due to legacy thinking, risk aversion, and experience with goal setting. This work contributes to retailing theory and UET by unveiling the importance of the female CSO and her experience for retailers.

Keywords: chief sustainability officer, gender diversity, sustainability, upper echelons theory, retail performance.

2.1 Introduction

As consumers are becoming more conscious about sustainability (Carter, Jayachandran, and Murdock 2021; White, Habib, and Hardisty 2019), retailers must fully take responsibility for their environmental and social impacts (Gleim et al. 2013; Tangari, Burton, and Smith 2015; Grewal et al. 2021). When left unaddressed, these impacts might threaten firm's performance (Helfat et al. 2023), but when properly prioritized, they can lead to improved performance (Vadakkepatt et al. 2021). For example, Walgreens invests in sustainability projects, in areas such as renewable energy, recycling, diversity, and inclusion, which enables this firm to be part of the Dow Jones Sustainability Index North America. Supported by these sustainability projects, this retailer ranks 10th on the Fortune 500 list (Fortune 2023).

Sustainability means creating value for stockholders while contributing positively to the environment and society, often through practices of green and social innovation, ecoefficiency, and corporate responsibility. It rests on three core principles as defined by Bansal (2005): social equity, environmental integrity, and economic prosperity. Over time, a growing awareness of environmental and social issues has prompted retailers to embrace sustainable practices (Zhou et al. 2019). A sustainability-oriented retailer makes environmental and social efforts for current and future generations (Vadakkepatt et al. 2021). One example is Allbirds: the retailer demonstrates a commitment to sustainability by sourcing sustainable materials produced from regenerative agriculture, collaborating with partners who prioritize energy-efficient production processes, and advocating responsible product usage practices that minimize carbon emissions.

Upper echelons theory (UET) provides the proper lens for studying sustainability implementation by retailers (Connelly, Ketchen, and Slater 2011). To manage and disclose its sustainability agenda, a sustainability-oriented retailer's efforts include establishing a chief

sustainability officer (CSO) position (Fu, Tang, and Chen 2020; Vadakkepatt et al. 2021). The CSOs are responsible for the formulation and execution of retailers' sustainability strategies (Miller and Serafeim 2014) and their focus areas include the re-evaluation of business practices, considering environmental, social, and financial needs, and the formulation of strategies that align with sustainable development. The CSOs are ultimately entrusted with the crucial responsibility of managing internal processes and launching sustainable products and services (Velte and Stawinoga 2020).

Some retailers choose to assign female CSOs because women are viewed as better than men at dealing with sustainability (Brough et al. 2016) and tend to make less risky decisions (Varma, Bommaraju, and Singh 2023), which is important in the context of long-term matters of sustainability. One of the first retailers to hire a woman as CSO was Walmart in 2013 when they appointed Kathleen McLaughlin. In 2018, she was considered one of "The World's 50 Greatest Leaders" by Fortune (Walmart 2024). This groundbreaking appointment of a female CSO potentially catalyzed other retailers which became inspired and placed sustainability issues on the table of several top management teams (TMTs) by the appointment of female sustainability executives. This aligns with previous research that has found a positive performance impact of females on the TMT, such as the chief marketing officer (CMO) (Varma, Bommaraju, and Singh 2023; Oh and Song 2023), the chief financial officer (CFO) (Wang and Fung 2022), the chief technology officer (CTO) (Wu et al. 2021), and the chief corporate social responsibility officer (CCSRO) (Wiengarten, Lo, and Lam 2017). However, previous research has neglected the performance impacts of an important TMT member, the female CSO, and we aim to shed light on this issue.

Are all female CSOs equally effective in driving performance? UET posits that executives' characteristics impact performance (Hambrick and Mason 1984). It appears that one characteristic of female CSOs is particularly important – their experience – which is

acquired over time as those executives gain more years of work. We claim that female CSO experience directly impacts retailer performance and contingents the performance impact of retailer sustainability commitment. This happens due to several consequences of experience. First, more experienced female CSOs can work on sustainable sourcing practices to progressively improve supply chain management strategies, which can result in better brand image, reputation, and greater sales (Ganesan et al. 2009). Second, they can identify sustainable products and encourage consumers to choose those options (White, Habib, and Hardisty 2019), thus increasing sales. Third, experience brings legacy thinking that leads to greater care for future generations as time goes by (Frumkin, Fried, and Moody 2012). Finally, experienced executives are usually older and, therefore, become more risk averse over the years (Albert and Duffy 2012), and more caring for the future.

The female CSO takes the important role of guiding retailers toward a public commitment to sustainability (Carter, Jayachandran, and Murdock 2021; Mohrman and Worley 2010) through the disclosure of sustainability reports (Grewal et al. 2021) that foster market transparency (Bolton 2019). Retailers demonstrate their sustainability public commitment through two main strategies. First, the materiality assessment reveals the most important sustainability topics retailers should prioritize. This assessment involves engagement with all relevant stakeholder groups, including consumers, investors, employees, and suppliers, to listen to their concerns and priorities, foster a collaborative approach to sustainability, and define material topics (Whitehead 2017). The Global Reporting Initiative (GRI) defines material topics as those that reflect the firm most important environmental, social, and economic impacts (GRI 2021). Second, to inform stakeholders about their long-term commitment, retailers' female CSOs embrace a sustainability future vision by defining sustainability goals in all areas (Jones, Comfort, and Hillier 2005; BCG 2023). When demonstrating a commitment that extends beyond mere rhetoric, retailers can assure

stakeholders that their sustainability efforts are not transitory, but rather a strategic move with positive impacts on current and future generations. Hence, they can be perceived as sustainability-oriented retailers and the female CSO is crucial in this process.

Therefore, the objective of this study is to enhance the understanding of the direct and dynamic impacts of a female CSO and contingent effects on retailer sustainability commitment. We gathered unique publicly available data on 117 US retailers from sources such as the Bloomberg Database, CSOs' LinkedIn pages, sustainability reports, retailers' websites, and YouTube. We develop hypotheses and test them with a set of two-stage least squares models, with probit for dummy endogenous variables in the first stage, ordinary least squares for continuous endogenous variables in the first stage, and ordinary least squares in the second stage as our dependent variable is continuous. For identification purposes, we included greenhouse gas (GHG) emissions as an instrument for the variable female CSO, which is the log of the GHG emissions in the state where the retailer is located, and data was gathered from the Environmental Protection Agency (EPA).

Retail research can provide all stakeholders in the retailing ecosystem with strategies that are efficient from a retailer perspective, effective from a consumer perspective, and beneficial from a societal perspective. However, sustainability in retailing ecosystems is under-researched (Bolton 2019). There are a lot of conceptual papers that studied sustainable retailing (Vadakkappatt et al. 2021; Ganesan et al. 2009; Reinartz et al. 2011) and virtually no empirical retail research on the topics of impact of top management team gender and retailer sustainability commitment. Additionally, previous authors have built on UET to study the performance impact of female TMT members (Oh and Song 2023; Wu et al. 2021), but there is scant research on the direct and dynamic impacts of female CSOs and their sustainability commitment in the retail context.

This study's contributions to retailing literature and UET are three-folded. First, we unveil that the female CSO and her experience gained over time positively affect performance. This is in line with previous research (Oh and Song 2023; Wu et al. 2021; Wiengarten, Lo, and Lam 2017) and we contribute to this body of literature by unveiling a positive effect of the female CSO in the retail context. Our sample shows that retailers with a female CSO have 105% greater sales revenue growth compared to retailers with no CSO or a male CSO. Retailers benefit from the female CSO, who adds to diversity in the TMT by improving firm decision-making (Connelly, Ketchen, and Slater 2011). Our study also contributes to the literature by unveiling how women effectively handle sustainability issues by leveraging personal characteristics of risk aversion (Varma, Bommaraju, and Singh 2023; White, Habib, and Hardisty 2019). The positive performance impact of female CSO is increased over time by her experience. Our sample shows that retailers in the 75th percentile of female CSO experience 135% greater sales revenue growth. Experienced executives gain by having a better reasoning about complex issues related to sustainability and progressively guide retailers through sustainable sourcing and design strategies for supply chain management (Kanashiro and Rivera 2019). Additionally, experienced female CSOs can gradually apply their knowledge to identify sustainable products aligned with consumer needs and use persuasive communication to encourage the adoption of sustainable options which, in turn, increases performance (White, Habib, and Hardisty 2019).

Second, we show that female CSO diminishes the negative effect of materiality assessment. While transparency in materiality is crucial for sustainability, it can paradoxically lead to decreased sales due to increased scrutiny, perceived higher costs, and skepticism about the authenticity of sustainability claims. Materiality assessment hurts sales revenue growth because consumers are affected by the associated sustainability initiatives (by increases in prices or lack of product availability), but they are generally unaware of the

reasons for these efforts as they are disclosed on the sustainability reports which are rarely read by them (Barchiesi, Castellan, and Costa 2018). However, our results demonstrate that among retailers with high-quality materiality assessment, those with a female CSO have 170% higher sales revenue growth than their counterparts with no CSO or male CSO. The diminished negative materiality assessment quality effect of female CSO occurs for several reasons. Her policies tend to be more focused on stakeholders, who are crucial in the materiality assessment process (Glass, Cook, and Ingersoll 2016). Women tend to be more risk averse and the materiality assessment helps reduce sustainability risks (Varma, Bommaraju, and Singh 2023). Female CSO's traits of cooperativeness, along with a more "reasonable" approach, enable better coordination with other areas whose support is vital in the materiality assessment process (White, Habib, and Hardisty 2019). Consequently, female CSOs are suitable for implementing materiality assessments in a manner that ensures effective communication and integration into strategy leading to enhanced performance outcomes (Gleim et al., 2013; Whitehead, 2017).

Finally, we demonstrate how female CSO experience enhances the positive performance effect of sustainability future vision. Sustainability future vision positively affects performance mainly because the future can be unknowable and uncontrollable and setting sustainability goals in all areas facilitates retailers to navigate uncertainty (Bansal and DesJardine 2014). Our findings reveal that, among retailers with a sustainability future vision, those with highly experienced female CSOs achieve 20% higher sales revenue growth compared to those with less experienced female CSOs. Female CSO experience amplifies this effect; such leaders often develop a legacy-oriented mindset, which increases their focus on long-term impacts for future generations (Frumkin, Fried, and Moody 2012). More experienced executives are usually older and, as a result, care more about risk over the years (Albert and Duffy 2012). These experienced executives gradually become adept at setting

challenging yet achievable goals, thereby further enhancing the positive impact of a sustainability future vision.

2.2 Retail Sustainability Governance and Commitment

2.2.1 *Sustainability-oriented retailer*

Consumers are concerned about sustainability (Carter, Jayachandran, and Murdock 2021; White, Habib, and Hardisty 2019) which influences the way by which retailers implement an agenda to address environmental and social challenges (Gleim et al. 2013; Tangari, Burton, and Smith 2015; Grewal et al. 2021). If well managed, this agenda will lead to several benefits (Vadakkappatt et al. 2021; Buzzao and Rizzi 2021). First, environmental and social issues are a recent catalyst for retailers seeking process and product innovations (Ganesan et al. 2009). Second, the market for sustainable products has seen a steady expansion, which presents a significant opportunity for retailers to increase sales (Carter, Jayachandran, and Murdock 2021). Third, sustainability is critical for retailers to build and maintain a positive brand image (Bolton and Mattila 2015; Ganesan et al. 2009). More specifically, products manufactured in a socially responsible manner can improve a retailer's brand image (Ganesan et al. 2009) as the retailer's reputation for sustainability can attract conscious consumers (Carter, Jayachandran, and Murdock 2021).

Retailers then are a vital part of the pursuit of a sustainable future because they have a relevant economic impact and are close to end consumers (Claro, Laban Neto, and Claro 2013). For example, retailers such as IKEA and Patagonia are sustainability-oriented retailers. IKEA has initiatives such as a safe work environment with legal, regulated wages, and benefits for all rug weavers; working with suppliers to guarantee sustainable raw materials; and influencing consumer behavior through reuse. Patagonia implements a process that ensures its suppliers meet sourcing, quality, social, and environmental standards pre-

determined by the retailer; is involved in climate change action; and uses post-consumer recycled fleece and organic cotton, which are crafted from pre-consumer cotton remnants gathered from factory floors (Vadakkepatt et al. 2021; Grewal et al. 2021; Naidoo and Gasparatos 2018; Zint and Frederick 2001). To champion those actions, the CSO has a key role.

Consumers have been pressuring retailers to be more transparent regarding sustainability (Kang and Hustvedt 2014). Sustainability reporting creates value due to decreased information asymmetry (Lueg, Krastev, and Lueg 2019) so it is an essential strategy for sustainability-oriented retailers to show consumers their commitment to sustainability. Retailers show this sustainability commitment through two main strategies: a materiality assessment and a sustainability future vision. The first consists of the prioritization of the most important sustainability issues (GRI 2021) and the second of the definition of sustainability goals for the future in all sustainability areas (Jones, Comfort, and Hillier 2005; BCG 2023).

Retailer's TMT support and engagement are crucial in the journey toward sustainability. However, the adoption of sustainability initiatives brings challenges such as the lack of TMT commitment (Blass et al. 2014; Epstein, Buhovac, and Yuthas 2010; Arora et al. 2020). Therefore, over the last two decades, retailers have been appointing CSOs (Arora et al. 2020) because they view sustainability as a strategic necessity that requires sustainability representation in the TMT (Wiengarten, Lo, and Lam 2017). Also, some retailers choose to hire an experienced female CSO due to the benefits that come with this gender and extra knowledge. For example, Dollar Tree appointed Jennifer Silberman, who has 30 years of experience and has been working with sustainability and impact for over 25 years. She had previous experience with the design and implementation of sustainability

strategy and the development of a sustainability future vision with sustainability goals in other retailers such as Target and Yeti.

2.2.2 Upper Echelons Theory for Top Management Team

UET posits that performance is a function of TMT characteristics and actions (Hambrick and Mason 1984). The TMT is comprised of executives who provide direction for critical strategic decisions and will directly affect firm performance (Harmancioglu, Grinstein, and Goldman 2010). One key assumption of this theory is bounded rationality, as executives have limited cognitive abilities and rely on their value system to act (Connelly, Ketchen, and Slater 2011; Hambrick and Mason 1984). More specifically, when faced with a decision, an executive's field of vision is restricted. They have selective perception, which makes them notice only a fraction of the information in their field of vision, and this information is interpreted through a filter commanded by their cognitive base and values (Hambrick and Mason 1984). As executives receive information about sustainability, the response of the business will be a function of the way they interpret the information, and how their value system suggests they should respond. This response, in turn, will impact performance (Connelly, Ketchen, and Slater 2011).

TMT observable characteristics are a critical part of UET. Previous research shows how gender is one key characteristic to influence performance (Hambrick and Mason 1984; Harmancioglu, Grinstein, and Goldman 2010; Gu et al. 2023). A central premise is that women and men experience differences in how they perceive and relate to the world. One important difference rests on how they perceive risk: women are more risk averse than men. That is because men are more overconfident, while women have a greater failure avoidance orientation and a higher fear of scrutiny (Varma, Bommaraju, and Singh 2023). This is especially important when dealing with sustainability as it requires a long-term focus (White,

Habib, and Hardisty 2019). More specifically, long-term risks need to be minimized or eliminated to avoid planetary boundaries being crossed (Rockström et al. 2009).

Table 1 illustrates the growing body of research that examined the impact of the presence of a female executive on the TMT on performance. Oh and Song (2023) studied firms from the S&P 1500 list and found that female CMOs positively affects firm value, measured by Total Q, and CMO power positively moderates this effect. Analyzing a sample of American firms, Wu et al. (2021) discovered that female CTOs have a positive effect on innovation (patents and citations), with three positive moderations: innovation-supportive corporate culture, female CEO, and CTO power. Varma, Bommaraju, and Singh (2023) explored firms from the S&P 1500 list and unveiled that female CMOs make less risky decisions, have lower advertising-related earnings management, and have fewer NPIs. Finally, with Taiwan data, Wang, and Fung (2022) revealed that female CFOs hurt tail risk (Value-at-Risk) and a positive effect on firm performance (Tobin's Q). Wiengarten, Lo, and Lam (2017) studied United States firms and found a positive effect of female CCSROs on performance. However, previous authors have not studied the role of the female CSO in directly and dynamically driving performance in retail businesses.

We propose a conceptual framework and specific hypotheses drawing on extant research to predict the extent to which a female CSO and her experience impact retailer performance, as well as can condition the effects of characteristics such as a retailer sustainability commitment (materiality assessment and sustainability future vision). This parsimonious framework is presented in Figure 1 and the central arguments for our hypotheses are summarized in Table 2.

TABLE 1
Representative Research on Female on Top Management Team Performance and Contingency Effects

Reference	Journal	Theory	TMT member	Context	Contingency Effects	Financial performance	Empirical Setting	Key Findings
This project	Journal of Retailing	Upper echelons theory	CSO	United States Retailers	- Sustainability future vision - Materiality assessment	- Sales revenue growth	Cross-section (Performance in 2021-2023 and independent variables in 2022)	Female CSO and female CSO experience positively affects performance. Female CSO diminishes the negative performance effect of materiality assessment. Female CSO experience enhances the positive performance effect of sustainability future vision.
Oh and Song (2023)	Journal of Business Research	Upper echelons theory	CMO	S&P 1500 firms	- CMO power	- Total Q	Panel (1992 to 2017)	Female CMO positively affects performance. CMO power positively moderates this effect.
Varma, Bommaraju, and Singh (2023)	Journal of Marketing Research	Self-construal theory and agency-communion theory	CMO	S&P 1500 firms	- Female CEO - Relative firm performance - Demand uncertainty	- Advertising intensity - REM - NPI	Panel (2009 to 2019)	Female CMOs make less risky decisions. Firms with female CMOs have lower advertising-related earnings management. Female CMOs are associated with fewer NPIs. Female CMOs undertake more risky marketing decisions under a female CEO.
Wang and Fung (2022)	Finance Research Letters	Critical mass theory	CFO	Taiwan firms	N.A.	- Value-at-Risk - Tobin's Q	Panel (2009 to 2020)	Female CFOs have a negative effect on tail risk and a positive effect on firm value, while Female CEOs have a positive effect on tail risk and a positive effect on firm value.
Wu et al. (2021)	Research Policy	Upper echelons theory	CTO	United States firms	- Innovation-supportive corporate culture - Female CEO - CTO power	- Innovation	Panel (1991 to 2010)	Female CTO positively affects performance. Innovation-supportive corporate culture, Female CEO and CTO power positively moderate this effect.
Wiengarten, Lo, and Lam (2017)	Journal of Business Ethics	Upper echelons theory	CCSRO	United States firms	N.A.	- ROA	Panel (2004 to 2012)	Female CCSRO have a positive effect on performance. CCSRO with a CSR functional background have a positive impact on performance.

Notes: N.A. = Not applicable. TMT = top management team; CSO = chief sustainability officer; CMO = chief marketing officer; CTO = chief technology officer; CFO = chief financial officer; CCSRO = chief corporate social responsibility officer.

FIGURE 1
Conceptual Framework

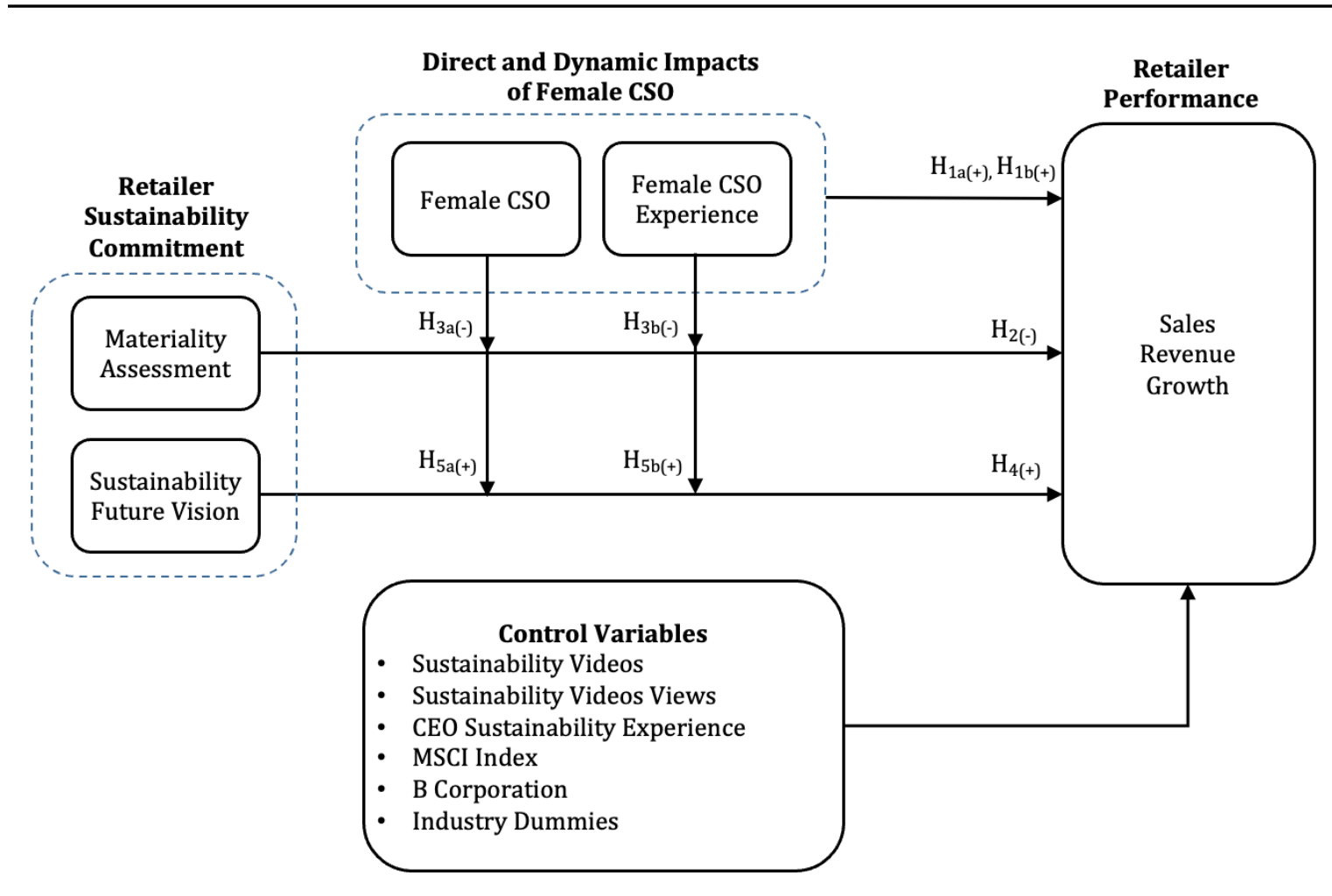


TABLE 2
Hypotheses

Hypotheses	Main arguments
H1a: Female CSO positively affects retailer performance.	<ul style="list-style-type: none"> - Women are more risk-averse. - Female CSO brings diversity to the TMT.
H1b: Female CSO work experience positively affects retailer performance.	<ul style="list-style-type: none"> - Experienced female CSOs develop better supply chain management strategies. - Those leaders can use their knowledge to identify sustainable products.
H2: Materiality assessment negatively affects retailer performance.	<ul style="list-style-type: none"> - Consumers do not perceive the materiality assessment. - This process requires "fundamental changes" in operations, supplier and product.
H3a: Female CSO diminishes the negative performance effect of materiality assessment.	<ul style="list-style-type: none"> - Female CSO is more "reasonable" and coordinates better with other areas. - She is more prone to implement policies focusing on stakeholders.
H3b: Experience gained by female CSO over time diminishes the negative performance effect of materiality assessment.	<ul style="list-style-type: none"> - More experienced leaders have more social capital. - Experienced female CSOs build better relationships with stakeholders.
H4: Sustainability future vision positively affects retailer performance.	<ul style="list-style-type: none"> - The uncertainty of the future together with leaders bounded rationality makes sustainability goals so important.
H5a: Female CSO enhances the positive performance effect of sustainability future vision.	<ul style="list-style-type: none"> - Female CSO is more prosocial, altruistic and empathetic. - She has greater risk-aversion.
H5b: Experience gained by female CSO over time enhances the positive performance effect of sustainability future vision.	<ul style="list-style-type: none"> - Experienced female CSOs have a legacy thinking and care about future generations. - These leaders tend to be older and more risk-averse.

2.3 Retail Sustainability and Performance

Consumers are key stakeholders in the sustainability agenda because they expect businesses to show responsibility for environmental and social issues (Vadakkepatt et al. 2021; Carter, Jayachandran, and Murdock 2021; Bolton and Mattila 2015). The retailing research has been using consumer-oriented measures, such as satisfaction and loyalty intentions (Bolton and Mattila 2015), purchase likelihood and willingness to pay (Carter, Jayachandran, and Murdock 2021), purchase of organic products (Van Doorn and Verhoef 2015), likelihood to choose products along with positive attitude towards products (Tangari, Burton, and Smith 2015), and sales revenue (Choi, Duhan, and Dass 2023). Therefore, we focus on an objective consumer-oriented measure: sales revenue growth. The growth aspect

is important because it shows how consumers changed their behavior because of the sustainability governance and commitment choices.

2.3.1 Impact of Top Management Team Gender

TMT gender may positively influence performance (Hambrick and Mason 1984; Harmancioglu, Grinstein, and Goldman 2010; Gu et al. 2023). The inclusion of a female CSO in the TMT will increase gender diversity, which is important in the context of sustainability as it brings different interpretations of information on the environment and society that will lead to more innovative solutions (Connelly, Ketchen, and Slater 2011; Hambrick, Cho, and Chen 1996). Previous research shows how female executives are more suitable for sustainability initiatives when compared to their male counterparts (UN 2018; BBC 2024; Wyman 2021). This effect can be explained by certain characteristics she possesses. First, women have collaborative traits that predispose them to demonstrate more sustainable consumer behaviors (White, Habib, and Hardisty 2019). Second, sustainability is viewed as feminine, considering that women are more prosocial, altruistic, and empathetic (Brough et al. 2016). Also, they are more positively rewarded for sustainable behaviors and are more prone to implement policies that focus on stakeholders (Glass, Cook, and Ingersoll, 2016). Third, women show increased willingness and concern for taking action to help the environment (Brough et al. 2016).

Sustainability also requires a deep focus on long-term matters (White, Habib, and Hardisty 2019). The long-term risks must be minimized or eliminated so that planetary boundaries are not crossed (Rockström et al. 2009). Female executives may drive performance, primarily because of their propensity to make less risky decisions compared to their male counterparts due to two key factors. First, women exhibit lower levels of overconfidence, thereby avoiding the underestimation of potential downsides associated with their choices. Second, women tend to have greater levels of accountability for their decisions

due to heightened scrutiny (Varma, Bommaraju, and Singh 2023). The personality trait of risk aversion will make women more suitable for dealing with complex sustainability decisions, as they usually involve concessions such as financial losses in the short run that will allow for performance in the long run (Hambrick and Mason 1984; Connelly, Ketchen, and Slater 2011).

H1a: Female CSO positively affects retailer performance.

As CSOs progress in their career, accumulating more years in their work, they will accumulate experience over time. Moreover, those more experienced CSOs will lead to better decision-making about critical and complex issues over the years (Kanashiro and Rivera 2019), such as sustainability issues. Experience will influence female CSOs' decision-making in two main ways. First, female CSOs with more experience can progressively help retailers understand sustainable sourcing practices and develop refined strategies for supply chain management. This can lead to improved brand image, reputation, and sales (Ganesan et al. 2009). Second, those experienced female executives can gradually use their knowledge to identify sustainable products, and they can attract consumers by using strategies to encourage them to choose those sustainable options (White, Habib, and Hardisty 2019), increasing sales.

H1b: Female CSO experience positively affects retailer performance.

2.3.2 *Retailer Sustainability Commitment*

Sustainability-oriented retailers show their sustainability commitment in two main ways: the conduction of a materiality assessment and the development of a sustainability future vision. A materiality assessment is a crucial initial step for retailers that will embark on a sustainability journey (Eccles et al. 2013). It consists of the consultation of internal and external stakeholders for the definition of material topics, which are defined by the GRI as those that represent relevant impacts on the economy, environment, and people (GRI 2021). This process involves an initial diagnosis with an analysis of documents and standards such

as GRI, Sustainability Accounting Standards Board, and Morgan Stanley Capital International (MSCI), to develop an initial list of the retailers' externalities, followed by research with internal and external stakeholders to prioritize sustainability issues and define the material topics.

Making materiality public would typically lead to greater transparency, increased consumer trust, and higher sales. However, consumers do not perceive that a retailer has done a materiality assessment, because those assessments are disclosed in sustainability reports, and they are not inclined to read them (Barchiesi, Castellan, and Costa 2018). Additionally, publicizing materiality issues and results, which are not always positive, can generate more scrutiny and negative publicity. For instance, if air pollution, product safety, or labor practices play a material role for a given retailer, being transparent in reporting an environmental violation, a product recall, or a fine related to labor practices can attract negative media attention and influence consumer choices. From a sustainability perspective, reporting problems is considered best practice, but it can certainly have a negative impact on sales.

Another explanation could be that, for many consumers, sustainability is associated with higher prices. Knowing that a retailer is taking sustainability seriously, based on the publicized materiality diagnosis, could influence consumers' perception of pricing fairness. In the same direction, investments in material topics require sustainability actions. Those come with underlying "fundamental changes" in operations, suppliers, and products (Hart 1995). For example, a material topic for a food retailer could be raw material sourcing. To address this in the production of a certain food product, the retailer might want to discontinue its contract with a current supplier and develop a relationship with a new supplier that has a sustainable production process. In the meantime, this food product might be out of stock, which will reduce sales in the short run. Another example is an automotive retailer that has

carbon emissions as a material topic. A possible action should be to change its energy source to renewable energy. If these costs are passed on to consumers through higher prices, it can lead to reduced sales, especially if competitors offer similar products at lower prices.

Finally, even when consumers read those reports, there are also allegations of retailers exaggerating or misreporting their material sustainability progress because sustainability reports are not regulated (Maniora 2018). The rapid acceleration of corporate sustainability pledges, combined with the fragmentation of approaches, makes it more difficult than ever to distinguish between genuine and unsubstantiated sustainability strategies. There is a large gap between what retailers say and the reality, and consumers are likely to find it difficult to determine the truth. Therefore, sales would not increase based on statements that are not tangible to consumers.

H2: Materiality assessment negatively affects retailer performance.

UET has studied how TMT actions affect performance (Connelly, Ketchen, and Slater 2011; Whitley et al. 2021; Harmancioglu, Grinstein, and Goldman 2010). One important TMT action conducted by the CSO through which retailers show their public commitment is a materiality assessment. It will only foment sustainability initiatives that are perceived by consumers and reflect on performance if it is well communicated (Gleim et al. 2013), and if it leads to changes in the retailers' strategies (Whitehead 2017), and this requires qualified leadership. Women executives are better equipped to deal with sustainability issues (UN 2018; BBC 2024; Wyman 2021).

A Female CSO reduces the short-term negative effect of materiality assessment on performance for two main reasons. First, she will be better in working together with other areas, due to her inclusive traits (White, Habib, and Hardisty 2019). Second, the interests of consumers, employees, investors, and suppliers will be considered in her policies (Glass, Cook, and Ingersoll, 2016), and those stakeholders are key when developing a materiality

assessment. Consequently, to integrate the materiality assessment into strategy, it is helpful to have a leadership figure that is good with sustainability issues: a female CSO.

H3a: Female CSO diminishes the negative performance effect of materiality assessment.

More experienced executives have more social capital over time (Easton and Rosenzweig 2015). Nahapiet and Ghoshal (1998, p. 243) defined social capital as “the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit.” Therefore, more experienced female CSOs will be able to build better relationships with stakeholders over the years by having more social capital. This is key when developing a materiality assessment, as engagement with stakeholder groups by listening to their needs is crucial to define which sustainability topics are material for retailers (Whitehead 2017). By defining those topics in the right way, experienced female CSOs will be able to integrate them into strategy and extract good performance from that.

H3b: Experience gained by female CSO over time diminishes the negative performance effect of materiality assessment.

The second way in which sustainability-oriented retailers show sustainability commitment with a sustainability future vision. To create a sustainability future vision, retailers integrate sustainability goals with financial goals since they are not in conflict with each other, but are complementary, because achieving sustainability also enhances profits and growth (Vadakkepatt et al. 2021). Sustainability acknowledges the future as unknowable and uncontrollable (Bansal and DesJardine 2014), but to have a sustainability future vision with sustainability goals can help retailers deal with this uncertainty. Considering UET shows that executives' bounded rationality affects their choices, the reduction of uncertainty is key (Connelly, Ketchen, and Slater 2011). Retailers have been developing a sustainability vision

with goals for the future (Vadakkepatt et al. 2021). For example, Allbirds communicates their sustainability future vision to consumers by the disclosure of videos that talk about their goals such as the reduction in product carbon footprint, and by the inclusion of tags in their products that shows their progress towards this goal (Allbirds 2024). Therefore, a sustainability future vision with sustainability goals improves retailer performance in the long run (Claro and Claro 2014).

H4: Sustainability future vision positively affects retailer performance.

Executives have the important role of integration between sustainability and financial goals (Gates and Germain 2010). Female CSO actions demonstrate her sustainability commitment with a sustainability future vision which involves the definition of sustainability goals for retailers that contribute to long-term performance and are crucial for executives seeking to advance in the sustainability agenda (Broman and Robert 2017; BCG 2022), by contributing to sustainable development (Maia et al. 2022). For example, Albertsons' CSO is Suzanne Long and this food retailer has sustainability goals in areas such as carbon emissions reduction, recycling, inclusion, diversity, product, and community. Women deal better with long-term matters such as sustainability in two main ways. First, women are more prosocial, altruistic, and empathetic (Brough et al. 2016), which makes them care about future generations. Second, women are more risk averse (Varma, Bommaraju, and Singh 2023), which leads to more carefulness about future impacts. This makes them suitable for the development of a sustainability future vision in retail businesses, considering that sustainability-oriented retailers are also concerned with future generations (Vadakkepatt et al. 2021). The female CSO should emphasize those sustainability goals when retailers attempt to position sustainable products because the focus should be more future-oriented (Carter, Jayachandran, and Murdock 2021), which will lead to greater sales.

H5a: Female CSO enhances the positive performance effect of sustainability future vision.

More experienced female CSOs can enhance the positive performance effect of sustainability future vision in three main ways. First, they have legacy thinking, which means that they are concerned about the people who will come after them, so they care more about future generations as time goes by (Frumkin, Fried, and Moody 2012). Second, they tend to be older and, consequently, avoid risky behavior (Albert and Duffy 2012), and women in general tend to avoid risks (Varma, Bommaraju, and Singh 2023), which intensifies this effect. This is especially relevant since when older people have greater risk aversion, they are more future-oriented (Tavares 2022). Finally, female CSOs become gradually more experienced in developing challenging and achievable goals because they have been doing that for a long time and have been able to see the results of different goals, so they can predict what is going to work out.

H5b: Experience gained by female CSO over time enhances the positive performance effect of sustainability future vision.

2.4 Method

2.4.1 Data and Study Measures

We collected data from all publicly listed US retailers from the Bloomberg Database, sustainability reports, retailers' websites, and CSOs' LinkedIn pages. We then selected the retailers (n=117) who made available by any means a sustainability report, an integrated report, or information about sustainability on their website in the year 2022. Retailers are in the following industries, based on aggregation on Bloomberg categories developed by the authors: apparel retail (26%), automotive retail (16%), consumer retail (23%), food retail (8%), home retail (19%), and service retail (8%). Our dependent variable is *Sales Revenue*

Growth, it refers to the difference in sales revenue from the retailer operating activities, from the Bloomberg Database, subtracting the average of the first semester of 2021 from the average of the first semester of 2023.

Our first independent variable and moderator is *Female CSO*, which is a dummy variable that receives 1 if the retailer has a female high sustainability executive (CSO, Sustainability Vice President, Sustainability Director, Sustainability Head, and Sustainability Manager) and 0 if it is male or if the retailers do not have this position, data was collected from executives LinkedIn profiles or retailers' websites, from 2022. Our second independent variable and moderator is *Female CSO Experience*, which shows the number of years the female CSO has been working. It was calculated using either the date of her first job, or undergrad end date. Data was gathered from executives' LinkedIn profiles or retailers' websites. We included *Materiality Assessment* and *Sustainability Future Vision* as independent variables. First, we collected retailers' sustainability reports, integrated reports, or sections of sustainability on their websites, from 2022. Second, two independent coders evaluated those reports to find out if the retailers had a materiality assessment and sustainability goals for the future. Third, we evaluated the *Materiality Assessment* on a scale of 0 to 3, depending on three variables related to this analysis: engagement with stakeholders, following standards, and having the last update in the last 5 years. Also, we evaluated retailers' *Sustainability Future Vision* as a dummy variable that receives 1 for retailers that both coders agree have goals in all sustainability areas and 0 for others.

We included several control variables to increase the reliability of our estimates. *Sustainability Videos* is a dummy that receives 1 for retailers that have videos on YouTube related to sustainability in the first 10 returns when searching for the keywords sustainability and ESG with the name of the retailer, and 0 for others. *Sustainability Videos Views* indicates the number of views of those videos. *CEO Sustainability Experience* is a dummy that

assumes 1 for retailers with CEOs who sits in the board of a sustainability-focused firm (Global Compact, Dow Jones Sustainability Index North America or B corporation), and 0 for others. *MSCI Index* indicates the retailers' exposure to sustainability issues and was calculated by dividing the number of material issues that the MSCI considers material for that industry by the total of possible issues. *B Corporation* is a dummy that assumes 1 for retailers that are B corporations and 0 for others. Finally, industry dummies (apparel retail, automotive retail, consumer retail, food retail, and home retail were included, and service retail is the base) were developed based on an aggregation on Bloomberg categories developed by the authors. All constructs' definitions and measures are shown in Table 3.

Figure 2 shows how sales revenue growth behaves depending on CSO gender. We can see that female CSO show a clear superior performance, while male CSO and no CSO lead to a much lower result. Also, Table 4 contains the descriptive statistics and correlations.

FIGURE 2
Sales Revenue Growth by CSO Gender

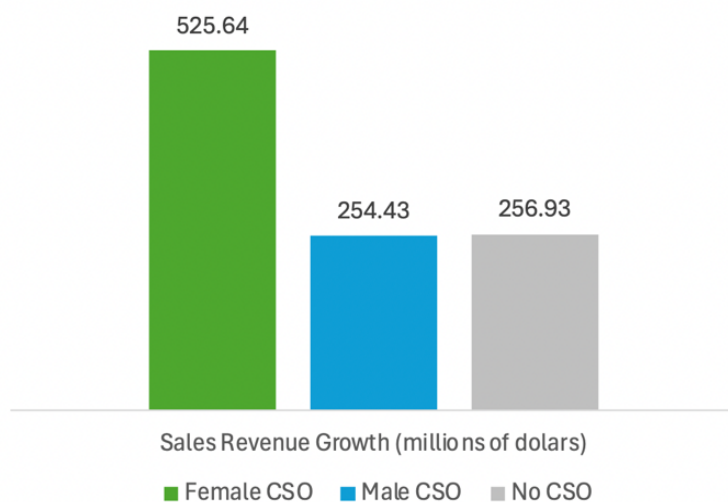


TABLE 3
Construct Definitions and Measures

Variable	Definition	Measure	Data Source
Dependent Variables			
Sales Revenue Growth	Growth of retailer' sales revenue.	Winsorizing at 5% the difference in total sales revenue, in millions of dollars, in the first semester of 2023 and the first semester of 2021.	Bloomberg.
Impact of Top Management Team Gender			
Female CSO	Show which retailers have a female responsible for sustainability governance by having a female CSO, Sustainability Vice President, Sustainability Director, Sustainability Head or Sustainability Manager.	Dummy that assumes 1 for retailers that have a female responsible for sustainability governance and 0 for others.	Linkedin and retailers websites.
Female CSO Experience	Work experience of the female CSO.	Number of years since the female CSO started to work.	Linkedin and retailers websites.
Retailer Sustainability Commitment			
Materiality Assessment	Indicates if the retailer conducted and disclosed a materiality assessment.	Grade from 0 to 4, depending on the quality of retailers' materiality assessment.	Sustainability report, annual report or sustainability section on firm' website.
Sustainability Future Vision	Indicates if the retailer has sustainability goals disclosed.	Dummy that assumes 1 for retailers that have sustainability goals in all areas and 0 for others.	Sustainability report, annual report or sustainability section on retailer website.
Instrumental Variable			
Greenhouse gas emissions	Represents the greenhouse gas emissions in the state where the retailer is located.	Log of the greenhouse gas emissions in the state of the retailers' headquarters.	Environmental Protection Agency.
Controls			
Sustainability Videos	Retailers communication through videos.	Dummy that assumes 1 for retailers that have sustainability videos and 0 for the ones who do not.	Youtube.
Sustainability Videos Views	Shows the exposure of the retailer' sustainability videos.	Number of views of sustainability related videos.	Youtube.
CEO Sustainability Experience	Measures the sustainability experience of the CEO.	Dummy that assumes 1 for retailers that have CEOs who sits in the board of a sustainability-focused firm (Global Compact, DJSI North America or B corporation) and 0 for others.	Retailers' website, Global Compact, DJSI North America and B corporations.
MSCI Index	Indicates how exposed the retailer is to sustainability issues.	Number of issues that MSCI considers material for that industry divided by total of possible issues.	MSCI.
B Corporation	Indicates which retailers are B corporations.	Dummy that assumes 1 for retailers that are B corporations and 0 for others.	B corporation website.
Industry dummies	Industry characteristics.	Set of 5 dummy variables representing 6 industries, that are aggregations based on Bloomberg's classification.	Bloomberg.

TABLE 4
Descriptive

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 Sales Revenue Growth (in thousands)	0.332	0.753	1														
2 Female CSO	.282	.452	.162	1													
3 Female CSO Experience	5.991	1.205	.240	.941	1												
4 Materiality Assessment	.684	1.056	-.035	.152	.121	1											
5 Sustainability Future Vision	.325	.470	.228	.336	.324	.243	1										
6 Sustainability Videos	.265	.443	.209	.226	.199	.162	.204	1									
7 Sustainability Videos Views (in millions)	0.072	0.354	.164	.114	.100	.238	.023	.340	1								
8 CEO Sustainability Experience	.060	.238	-.117	.002	-.014	.042	.133	.070	-.051	1							
9 MSCI Index	.278	.060	-.002	-.009	.021	.003	.016	.114	.129	.121	1						
10 B Corporation	.214	1.363	-.114	.097	.015	.095	.227	.262	-.030	.252	.105	1					
11 Apparel Retail	.256	.439	-.188	.110	.089	.177	.094	.042	-.070	.099	-.035	.153	1				
12 Automotive Retail	.162	.370	.102	.224	-.200	-.132	.157	.107	-.090	.111	-.327	-.069	.259	1			
13 Consumer Retail	.231	.423	.116	.198	.208	-.105	.010	.177	.065	.138	.278	-.086	.322	.241	1		
14 Food Retail	.077	.268	.167	.033	.019	.239	.074	.117	.342	.062	.125	-.045	.170	.127	.158	1	
15 Home Retail	.188	.392	-.157	.059	-.049	-.063	.040	.008	-.096	.063	-.097	.053	.283	.212	.264	.139	1

Notes: For correlation between two dummy variables we used Cramer's V and for correlation between dummy and continuous we used point-biserial correlation.

2.4.2 Addressing Endogeneity

Endogeneity might be present in the model-free results since retailers could systematically select the gender of their CSO. More specifically, retailers with better sales performance might care more about gender representation in the TMT and choose a female CSO (Varma, Bommaraju, and Singh 2023). To address that, we adopt an Instrumental Variable (IV) approach, which is widely recognized for its ability to, in the presence of omitted variables, obtain consistent estimators (Wooldridge 2013). Therefore, for identification purposes, we included an IV for the variable *Female CSO: GHG Emissions*. This variable represents the log of the GHG emissions in the state where the retailer is located, as reported by the EPA.

Following recent recommendations, we next discuss instrument relevance and exclusion restrictions (Lim, Tuli, and Grewal 2020; Germann, Ebbes, and Grewal 2015; Shi, Grewal, and Sridhar 2020). Instrument relevance implies that the proposed instrument and the endogenous variable conceptually correlate. *GHG Emissions* indicate how a retailer is in a high emitting state and is likely pressured to care about sustainability, and more pressured industries will be more likely to hire a female CSO. Exclusion restriction means that the proposed instrument does not correlate with the omitted variables that are part of the error term. A common type of omitted variables that can affect firm performance are firm-level variables, such as firm culture. We argue that *GHG Emissions* are not related to firm-level variables. For instance, organizational culture can be defined as rituals and values that integrate members of the firm (Watkins 2013) and are not related to factors that are external to the firm such as *GHG Emissions*. Therefore, we conclude that instrument relevance and exclusion restrictions are respected.

2.4.3 Analytical Procedure

To test our hypotheses, the two-stage least squares is a suitable approach (Wooldridge 2013). In the first stage, we instrumented the endogenous variable using probit for the dummy endogenous variables and ordinary least squares for the continuous endogenous variables. In the second stage, we used ordinary least squares because our dependent variable is continuous (Eq. 1 to 4).

Sales Revenue Growth

$$\begin{aligned} &= \beta_0 \\ &+ \beta_1 \textit{Female CSO} + \beta_2 \textit{Materiality Assessment} \\ &+ \beta_3 \textit{Future Vision} + \textit{Controls} + \varepsilon \end{aligned}$$

(1)

Sales Revenue Growth

$$\begin{aligned} &= \beta_0 \\ &+ \beta_1 \textit{Female CSO} + \beta_2 \textit{Materiality Assessment} \\ &+ \beta_3 \textit{Future Vision} + \beta_4 \textit{Female CSO} * \textit{Materiality Assessment} \\ &+ \beta_5 \textit{Female CSO} * \textit{Future Vision} + \textit{Controls} + \varepsilon \end{aligned}$$

(2)

Sales Revenue Growth

$$\begin{aligned} &= \beta_0 \\ &+ \beta_1 \textit{Female CSO Experience} + \beta_2 \textit{Materiality Assessment} \\ &+ \beta_3 \textit{Future Vision} + \textit{Controls} + \varepsilon \end{aligned}$$

(3)

Sales Revenue Growth

$$\begin{aligned} &= \beta_0 \\ &+ \beta_1 \textit{Female CSO Experience} + \beta_2 \textit{Materiality Assessment} \\ &+ \beta_3 \textit{Future Vision} + \beta_4 \textit{Female CSO Experience} \\ &* \textit{Materiality Assessment} + \beta_5 \textit{Female CSO Experience} \\ &* \textit{Future Vision} + \textit{Controls} + \varepsilon \end{aligned}$$



(4)

2.5 Results

2.5.1 Main Results

Results are presented in Table 5: Models 1 and 3 show the main effects with controls and Models 2 and 4 also display the interaction terms. To explore the moderating effect of *Female CSO* and *Female CSO Experience* we conducted graphical analyses, and the results are presented in Figure 3.

H1a was supported ($\beta = .276, p < .01$), which shows that *Female CSO* increases *Sales Revenue Growth*. This result is in line with previous authors that found a positive performance impact of female TMT members (Oh and Song 2023; Wu et al. 2021; Varma, Bommaraju, and Singh 2023; Wang and Fung 2022). Also, H1b was supported ($\beta = .233, p < .05$), which proves that *Female CSO Experience* increases *Sales Revenue Growth*. Both those findings are aligned with UET (Hambrick and Mason 1984).

TABLE 5
Results

Variable	Sales Revenue Growth			
	Model 1	Model 2	Model 3	Model 4
Direct and Dynamic Impacts of Female CSO				
Female CSO	H _{1a} .276 (.092)**	.184 (.102)		
Female CSO Experience			H _{1b} .233 (.095)*	.285 (.115)*
Retailer Sustainability Commitment				
Materiality Assessment	H ₂ -.112 (.098)	-2.324 (1.117)*	H ₄ -.114 (.099)	-.175 (.115)
Sustainability Future Vision	H ₄ .125 (.096)	1.215 (.697)	H ₆ .091 (.099)	.293 (.137)*
Moderations				
Female CSO*Materiality Assessment		H _{3a} 2.239 (1.122)*		
Female CSO*Future Vision		H _{5a} -1.134 (.709)		
Female CSO Experience*Materiality Assessment				H _{3b} .122 (.143)
Female CSO Experience*Future Vision				H _{5b} -.331 (.157)*
Controls				
Sustainability Videos	.174 (.102)	.185 (.101)	.182 (.103)	.173 (.102)
Sustainability Videos Views	.075 (.099)	.122 (.102)	.042 (.100)	.053 (.100)
CEO Sustainability Experience	-.006 (.093)	.017 (.093)	-.052 (.093)	-.030 (.093)
MSCI Index	-.008 (.097)	-.060 (.100)	-.023 (.098)	-.031 (.097)
B Corporation	-.110 (.096)	-.101 (.095)	-.102 (.097)	-.128 (.098)
Apparel Retail	-.183 (.154)	-.217 (.155)	-.285 (.156)	-.291 (.154)
Automotive Retail	.052 (.142)	.023 (.141)	-.002 (.142)	.020 (.141)
Consumer Retail	-.014 (.152)	-.039 (.151)	-.140 (.155)	-.133 (.154)
Food Retail	.028 (.122)	.014 (.122)	.045 (.124)	.083 (.124)
Home Retail	-.208 (.142)	-.246 (.143)	-.253 (.144)	-.241 (.143)
<i>Intercept</i>	.000 (.086)	.000 (.085)	.000 (.087)	.000 (.086)
<i>Observations</i>	117	117	117	117

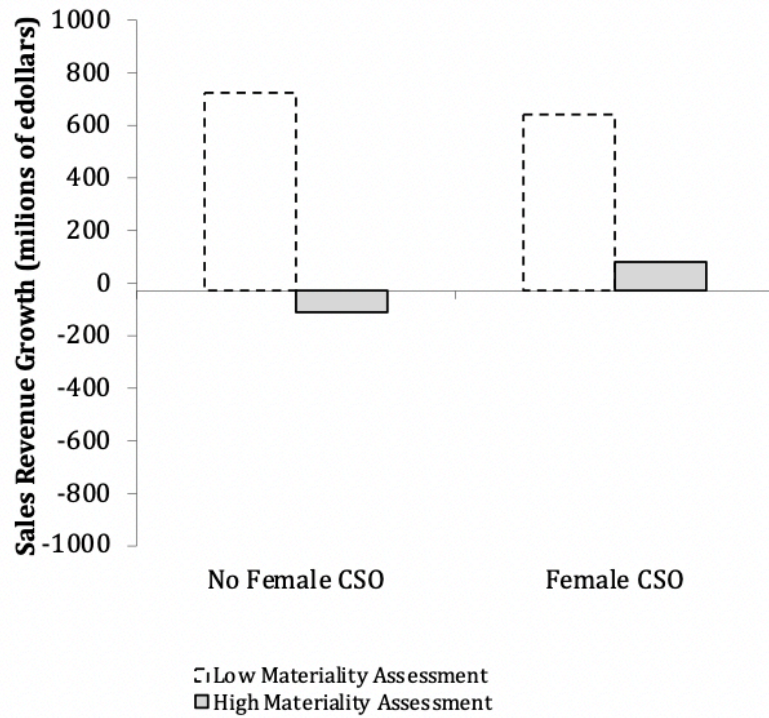
* $p < .05$.

** $p < .01$.

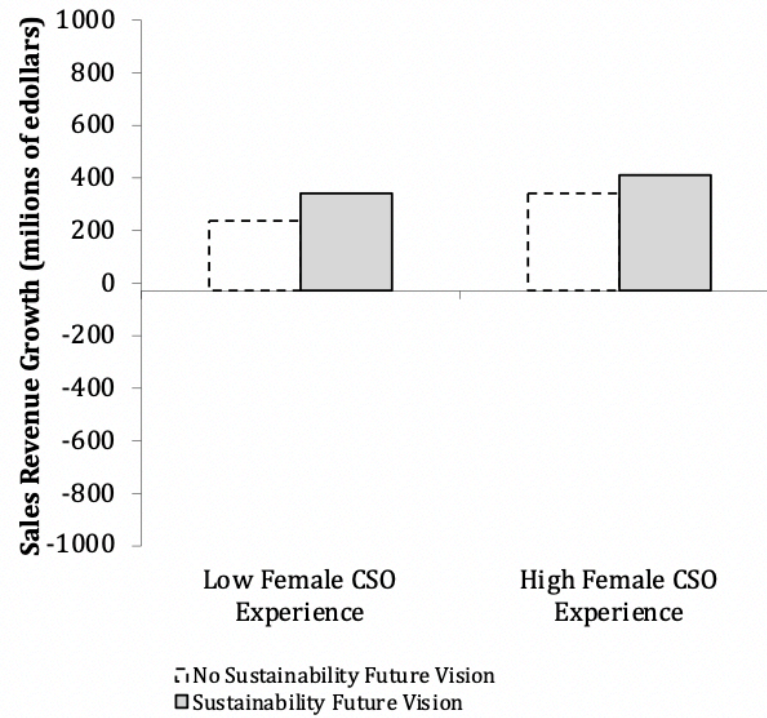
Notes: Models are estimated with generalized two stage least squares with probit on the first stage and ordinary least squares on the second stage, including instrumental variable of greenhouse gas emissions for Female Chief Sustainability Officer. All variables are standardized. Dependent variable is winsorized at 5%. Standard error reported in parentheses.

FIGURE 3
Contingent Effects

A: Female CSO x Materiality Assessment



B: Female CSO Experience x Sustainability Future Vision



Notes: plotted using 0.2 standard deviation.

H2 was not supported, because the effect of *Materiality Assessment* on performance is negative, but not significant. Additionally, *Female CSO* diminishes the negative performance effect of *Materiality Assessment*, H3a was supported ($\beta = 2.239, p < .05$, Figure 3). More specifically, in the universe of retailers with high-quality *Materiality Assessment*, the ones with a *Female CSO* have 170% higher *Sales Revenue Growth* than their counterparts with no CSO or male CSO. However, H3b was not supported since the interaction between *Materiality Assessment* and *Female CSO Experience* is positive, but not significant.

Moreover, the effect of *Sustainability Future Vision* on performance is positive, but not significant, so we did not find support for H4. Also, the interaction between *Sustainability Future Vision* and *Female CSO* is not significant, so H5a was not supported. Nevertheless, H5b was supported ($\beta = -.331, p < .05$, Figure 3), indicating that *Female CSO Experience* enhances the positive effect of *Sustainability Future Vision*. More specifically, considering retailers with a *Sustainability Future Vision*, the ones with high *Female CSO Experience* have 20% higher *Sales Revenue Growth* than their counterparts with low *Female CSO Experience*.

2.5.2 Post-hoc Analysis

To further investigate our hypotheses, we conducted some post-hoc analyses. First, to offer further support to our hypotheses and make sure that the results are not influenced by retailers with no CSO, we run the models for Male CSO. It is a dummy variable that assumes 1 if the retailer has a male high sustainability executive (CSO, Sustainability Vice President, Sustainability Director, Sustainability Head, and Sustainability Manager) and 0 if it is female or if the retailers do not have this position, in 2022, data was collected from executives LinkedIn profiles or retailers' websites. Results are presented in Table 6.

TABLE 6
Post-hoc: Male

Variable	Sales Revenue Growth			
	Model 5	Model 6	Model 7	Model 8
Direct and Dynamic Impacts of Male CSO				
Male CSO	H _{1a} -0.264 (.092)**	-0.267 (.096)**		
Male CSO Experience			H _{1b} -0.030 (.094)	-0.014 (.128)
Retailer Sustainability Commitment				
Materiality Assessment	H ₂ -0.114 (.098)	-0.744 (.337)*	H ₄ -0.105 (.103)	-0.053 (.115)
Sustainability Future Vision	H ₄ 0.125 (.096)	-1.348 (.815)	H ₆ 0.138 (.100)	0.076 (.117)
Moderations				
Male CSO*Materiality Assessment		H _{3a} 0.679 (.342)		
Male CSO*Future Vision		H _{5a} 1.455 (.807)		
Male CSO Experience*Materiality Assessment				H _{3b} -0.133 (.141)
Male CSO Experience*Future Vision				H _{5b} 0.145 (.134)
Controls				
Sustainability Videos	.177 (.102)	.186 (.101)	.206 (.106)	.184 (.107)
Sustainability Videos Views	.071 (.100)	.123 (.102)	.044 (.103)	.047 (.104)
CEO Sustainability Experience	-0.008 (.094)	.015 (.093)	-0.049 (.096)	-0.031 (.098)
MSCI Index	-0.009 (.098)	-0.061 (.100)	-0.040 (.102)	-0.052 (.102)
B Corporation	-0.113 (.096)	-0.104 (.095)	-0.114 (.101)	-0.104 (.101)
Apparel Retail	-0.185 (.154)	-0.215 (.155)	-0.246 (.160)	-0.238 (.161)
Automotive Retail	.050 (.142)	.022 (.142)	-0.009 (.146)	.003 (.147)
Consumer Retail	-0.015 (.152)	-0.039 (.151)	-0.072 (.157)	-0.033 (.161)
Food Retail	.035 (.123)	.016 (.122)	.061 (.128)	.080 (.129)
Home Retail	-0.205 (.143)	-0.241 (.144)	-0.233 (.148)	-0.228 (.149)
Intercept	.000 (.086)	.000 (.085)	.000 (.089)	.000 (.090)
Observations	117	117	117	117

* $p < .05$.

** $p < .01$.

Notes: Models are estimated with generalized two stage least squares with probit on the first stage ordinary least squares on the second stage, including instrumental variable of greenhouse gas emissions for Male Chief Sustainability Officer. All variables are standardized. Dependent variable is winsorized at 5%. Standard error reported in parentheses.

Results from this model strengthen our conclusions. The direct effect of *Male CSO* on *Sales Revenue Growth* is negative and significant ($\beta = -.264, p < .01$) which shows that they hurt performance. This reinforces the idea in the literature that women are better leaders for sustainability than men (UN 2018; BBC 2024; Wyman 2021). Also, *Male CSO Experience* has a negative but not significant effect on *Sales Revenue Growth*, showing that only the experience characteristic dissociated from the gender characteristic is not enough.

Second, another performance measure was evaluated, namely profit margin. We chose this measure to make sure that the actions of the female CSO do not increase costs enough that the results do not hold for profits. Results are presented in Table 7.

H1a ($\beta = .217, p < .05$) is still supported under the new dependent variable. This shows that the effect of a *Female CSO* not only increases *Sales Revenue Growth* but also *Profit Margin Growth*. This evidence is important because it shows that this female executive can implement sustainability actions that increase sales revenue without a similar increase in costs, showing their effectiveness in creating value for the retailer. We did not find a significant effect that *Female CSO Experience* increases *Profit Margin Growth*. A probable cause for that is the fact that hiring such an experienced executive is costly for the retailer.

TABLE 7
Post-hoc: Profit Margin Growth

Variable	Profit Margin Growth			
	Model 9	Model 10	Model 11	Model 12
Direct and Dynamic Impacts of Female CSO				
Female CSO	H _{1a} .217 (.095)*	.288 (.107)**		
Female CSO Experience			H _{1b} .058 (.100)	.186 (.122)
Retailer Sustainability Commitment				
Materiality Assessment	H ₂ -.019 (.102)	1.427 (1.176)	H ₄ -.018 (.104)	.070 (.122)
Sustainability Future Vision	H ₄ .144 (.100)	-.787 (.735)	H ₆ .141 (.104)	.202 (.144)
Moderations				
Female CSO*Materiality Assessment		H _{3a} -1.466 (1.182)		
Female CSO*Future Vision		H _{5a} .964 (.747)		
Female CSO Experience*Materiality Assessment				H _{3b} -.222 (.151)
Female CSO Experience*Future Vision				H _{5b} -.058 (.166)
Controls				
Sustainability Videos	.013 (.106)	.008 (.107)	.033 (.108)	.045 (.108)
Sustainability Videos Views	.038 (.104)	-.001 (.107)	.013 (.105)	-.011 (.106)
CEO Sustainability Experience	-.056 (.097)	-.071 (.098)	-.091 (.098)	-.101 (.099)
MSCI Index	.113 (.102)	.148 (.105)	.091 (.103)	.095 (.103)
B Corporation	-.159 (.100)	-.161 (.100)	-.156 (.102)	-.192 (.104)
Apparel Retail	-.195 (.160)	-.179 (.163)	-.251 (.164)	-.235 (.163)
Automotive Retail	-.156 (.148)	-.139 (.149)	-.202 (.149)	-.196 (.149)
Consumer Retail	-.206 (.158)	-.192 (.159)	-.266 (.163)	-.269 (.162)
Food Retail	-.133 (.128)	-.120 (.128)	-.110 (.130)	-.094 (.131)
Home Retail	-.362 (.148)*	-.342 (.151)*	-.386 (.151)*	-.399 (.151)**
<i>Intercept</i>	.000 (.089)	.000 (.089)	.000 (.091)	.000 (.091)
<i>Observations</i>	117	117	117	117

* $p < .05$.

** $p < .01$.

Notes: Models are estimated with generalized two stage least squares with probit on the first stage and ordinary least squares on the second stage, including instrumental variable of greenhouse gas emissions for Female Chief Sustainability Officer. All variables are standardized. Dependent variable is winsorized at 5%. Standard error reported in parentheses.

2.6 Discussion

2.6.1 *Theoretical Implications*

This work contributes to the existing knowledge base of retailing literature and UET in three key ways. First, previous authors have studied the impact of female representation on the TMT and financial results (Oh and Song 2023; Wu et al. 2021; Wiengarten, Lo, and Lam 2017); however, the direct and dynamic impacts of the female CSO on sales revenue growth in the retailer context have not yet been studied and we delve deeper into this topic. We show that having a female CSO and one with experience improves retailers' sales revenue growth. There are several reasons for this. The inclusion of such an executive in the TMT will increase gender diversity, which is relevant in the context of sustainability since it fosters various interpretations of information on the environment and society that will lead to more innovative solutions (Connelly, Ketchen, and Slater 2011; Hambrick, Cho, and Chen 1996). Previous authors have shown that female executives are more suitable to lead for the sustainability agenda (UN 2018; BBC 2024; Wyman 2021). This is because of certain characteristics that women possess, such as kindness, interconnectedness, and open-mindedness (White, Habib, and Hardisty 2019), they are more prosocial, altruistic, and empathetic, show increased willingness and concern to take action to help the environment (Brough et al. 2016), are more inclined to develop stakeholder-oriented policies (Glass, Cook, and Ingersoll, 2016), and tend to avoid risky behavior (Varma, Bommaraju, and Singh 2023).

Female CSO experience is also an important characteristic to be considered. We show that retailers with more experienced female CSOs have greater sales revenue growth. The main reason for this effect is that, as time goes by, more experienced CSOs make better decisions about critical and complex issues (Kanashiro and Rivera 2019), such as sustainability issues.

This can be explained by two main factors. These executives can progressively improve retailers' understanding of sustainable sourcing practices by developing a good supply chain strategy, which will improve brand image and reputation (Ganesan et al. 2009). Also, experienced female CSOs can access their knowledge base to identify sustainable products and use strategies to sell them to consumers (White, Habib, and Hardisty 2019). Therefore, a female CSO with experience will be more effective.

Second, we unveil that female CSO diminishes the negative effect of materiality assessment. The direct effect of materiality assessment on sales revenue growth is negative because consumers do not perceive such efforts, since they do not read sustainability reports (Barchiesi, Castellan, and Costa 2018), but are affected by them, and even in cases where they choose to read them, there can be misreporting (Maniora 2018). A female CSO diminishes this negative effect, as her policies are usually more focused on stakeholders (Glass, Cook, and Ingersoll 2016). Additionally, she has certain characteristics that allow her to work better with other people (White, Habib, and Hardisty 2019).

Finally, we show how female CSO experience enhances the positive performance effect of sustainability future vision. The direct effect of sustainability future vision on performance is positive since the future is unpredictable and having goals in all areas helps retailers navigate this uncertainty (Bansal and DesJardine 2014). Female CSO experience adds to that effect because they tend to have legacy thinking and care for future generations (Frumkin, Fried, and Moody 2012). Also, they are normally older and, consequently, prefer to avoid risk (Albert and Duffy 2012).

2.6.2 Managerial Implications

Our research uncovers unique implications for retail businesses that seek to become sustainability-oriented retailers. First, our results suggest that hiring a female CSO is a good strategy for retailers interested in pursuing the sustainability journey that are concerned with pleasing consumers and increasing sales revenue. These executives have unique characteristics that make them work better with others and maintain a long-term focus (White, Habib, and Hardisty 2019; Brough et al. 2016; Varma, Bommaraju, and Singh 2023). Consequently, they are better at handling sustainability issues.

Another important characteristic that retailers should look for when hiring a female CSO is experience. This characteristic will help those executives achieve greater sales revenue growth for retailers for a few reasons. First, more experienced female CSOs will improve supply chain management strategies, which will lead to improved brand image and reputation (Ganesan et al. 2009). Second, these executives can come up with sustainable products and persuade consumers to choose them (White, Habib, and Hardisty 2019). Third, experience comes with legacy thinking that makes those executives care for future generations (Frumkin, Fried, and Moody 2012). Finally, they are normally older and, consequently, more likely to avoid risk (Albert and Duffy 2012), caring for the future.

Retailers should also consider hiring a female CSOs when implementing a materiality assessment, because it will lead to better sales performance. A materiality assessment can have a negative impact since it is not perceived by consumers as it has an impact on them, but since it is disclosed in the sustainability report and they do not read them (Barchiesi, Castellan, and Costa 2018), and even when they do read them, retailers can exaggerate when reporting their progress (Maniora 2018). However, under the leadership of a female CSO, the results of such an

assessment will be positive. More specifically, our research shows that among retailers with high-quality materiality assessments, those with a female CSO have 170% higher sales revenue growth than their counterparts with no CSO or male CSO. That is because female CSOs possess unique collaborative traits (White, Habib, and Hardisty 2019), develop policies that consider the interested parties (Glass, Cook, and Ingersoll, 2016), and are more prone to avoiding risks (Varma, Bommaraju, and Singh 2023).

Finally, to amplify the effects of a sustainability future vision, retailers should choose female CSOs with experience. Our research shows that among retailers with a sustainability future vision, those with high female CSO experience have 20% higher sales revenue growth than their counterparts with low female CSO experience. Their experience gives them a legacy thinking that enhances care for future generations (Frumkin, Fried, and Moody 2012). Also, since experienced female CSOs are usually older, they tend to exhibit a greater aversion to risk (Albert and Duffy 2012). Those characteristics enable them to design better sustainability goals for the future in all areas.

2.6.3 Limitations and Future Research

The main limitation of our research is our focus on a single country (United States) and sector (retail). It opens avenues for future research opportunities, which could explore replicating this study across different countries and in other sectors. Investigating the impact of female CSOs in settings with varying sustainability cultures might reveal additional findings and new moderating factors influencing their effectiveness. Also, the difference in gender inequalities among these new settings may play an interesting part in the analysis.

Additionally, future studies could delve deeper into the specific leadership styles and approaches employed by successful female CSOs, offering valuable insights into their strategies

for driving sustainability performance. An experimental approach could be adopted to investigate female characteristics that make them successful in leading sustainability efforts, to enhance the understanding of their role.

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3. SUSTAINABILITY INVESTOR ACTIVISM PROPOSALS: IMPACTS OF FIRM PRIOR PERFORMANCE AND CONTINGENT EFFECTS OF CEO CHARACTERISTICS

Abstract

Investors have been targeting firms in activism proposals related to sustainability. However, what motivates those proposals is not clear. The authors contribute by unveiling how the decision of investors to target firms in sustainability activism proposals is motivated not only by financial and sustainability performance, but also by the characteristics of who is running the firm. This is in line with upper echelons theory, which postulates the importance of top management team characteristics on firm' performance. The authors propose that good prior firm performance and poor prior sustainability performance increase sustainability investors activism proposals and that CEO gender, CEO celebrity status and CEO political view moderates those effects.

Keywords: investor activism, upper echelons theory, CEO characteristics.

3.1 Introduction

As societies grapple with finding solutions to grand challenges like climate change, resource depletion, poverty, hunger, and inequalities, pressures for firms to play a role in addressing these challenges has increased (Carmine and De Marchi 2023; Stål, Riumkin, and Bengtsson 2023; Hart and Milstein 2003). One mechanism for making firms pay attention to those issues is through investor activism proposals related to sustainability concerns (Back and Colombo 2022; Yang, Uysal, and Taylor 2018). These proposals are used by investors of various types, such as social groups, individuals, churches, and large pension funds to gain attention and produce change (David, Bloom, and Hillman 2007; Wood 1991). For example, in a proposal directed at Vertex Pharmaceuticals, investors demanded that executives be evaluated and paid based on sustainability performance. They suggested metrics such as greenhouse gas emissions monitoring and reduction goals, green procurement programs, energy consumption, and progress toward workforce diversity goals (Back and Colombo 2022).

In this paper, we address an important but understudied question regarding these proposals: What are the antecedents behind investor activism proposals focused on sustainability? Specifically, we are interested in how characteristics of the firms and their top managers influence the likelihood that they will be targeted. Most existing research on the topic of investor activism focuses on the impacts of proposals on firms' performance (Back and Colombo 2022; David, Bloom, and Hillman 2007), with relatively little attention paid to the antecedents of those proposals (Denes, Karpoff, and McWilliams 2017; Goranova et al. 2017; Judge, Gaur, and Muller-Kahle 2010). To help fill this gap, we draw on and extend Upper Echelon Theory (UET) to propose that prior firm performance and prior sustainability performance directly impact the likelihood of a firm being targeted by activist investors and that characteristics of the firm's CEO magnify this effect.

Prior work has used UET to suggest that top management team (TMT) characteristics influence how firms are perceived by stakeholders (Recendes et al. 2023). Therefore, it appears plausible that those TMT characteristics could amplify or dampen activist investors' desire to target firms. To investigate this, we ask "How do characteristics of the CEO moderate the effect of prior firm performance and prior sustainability performance on whether a firm is targeted by activist investors?" UET suggests that the observable and psychological traits of TMT members impact firm performance. Building on this foundation, we explore the contingent effects of three specific CEO characteristics that are particularly relevant in the context of a firm's prior sustainability performance and its potential to attract sustainability investor activism proposals. First, CEO gender plays a significant role in sustainability efforts, with evidence suggesting that female leaders tend to be more effective in advancing sustainability initiatives. Second, CEOs with celebrity status may prioritize sustainability as a means of enhancing their public image. Finally, a CEO's political orientation can shape their approach to sustainability, given the divergent views often held by liberals and conservatives regarding these issues.

3.2 Investor Activism Proposals

Investor activism proposals are a formal connection between investors and firms. Investors in the United States can submit a proposal, according to rule 14a-8 of the Securities Exchange Act of 1934. The proposal needs to meet conditions such as the proposal writer must have an ownership share of at least \$2000 (or 1%) of the firm and meet formal requirements, which includes submission deadlines. If these conditions are met, three outcomes are possible: the proposal is omitted, voted at a meeting, or withdrawn (Diaz-Rainey et al. 2023; Back and Colombo 2022; Lesnes 2017).

While shareholder proposals can cover a wide range of strategic and governance topics, we are focusing on those that involve environmental or social issues, which are increasing in importance (Goranova and Ryan 2014) because investors are concerned about firms' sustainability efforts (BCG 2023). For example, activist investors often ask target firms to take actions such as reporting greenhouse gas emissions, properly labeling genetically engineered foods, or implementing ethical codes of conduct for overseas operations (Yang, Uysal, and Taylor 2018). More specifically, there is evidence that investor activism related to sustainability will have a positive impact on sustainability performance (Grewal, Serafeim, and Yoon 2016; Diaz-Rainey et al. 2023), therefore it seems to be the case that investors often target firms that have poor sustainability performance with the objective to improve it. In general, we anticipate that rational investor activists will prioritize firms where their proposals have a higher likelihood of effecting change.

3.3 Upper Echelons Theory and Sustainability

UET posits that TMT characteristics impact firm performance. The idea is that their characteristics will impact their values and cognitive base, which will determine how they act (Hambrick and Mason 1984). In this context, CEO characteristics are an important predictor of a firm's performance, which includes sustainability performance (Shahab et al. 2020; Hrazdil, Mahmoudian, and Nazari 2021). We suggest that characteristics of a firm's CEO will influence its attractiveness as a target for sustainability investor activism proposals. Therefore, this study focuses on the contingent impacts of CEO gender, celebrity status, and political view on investor activism proposals, as those characteristics are directly related to firms' sustainability performance, a key driver of those proposals.

Previous research has focused on UET to study sustainability, as illustrated in Table 1. Some were interested in the characteristics of the TMT (Dhir et al. 2023; Huang et al. 2022;

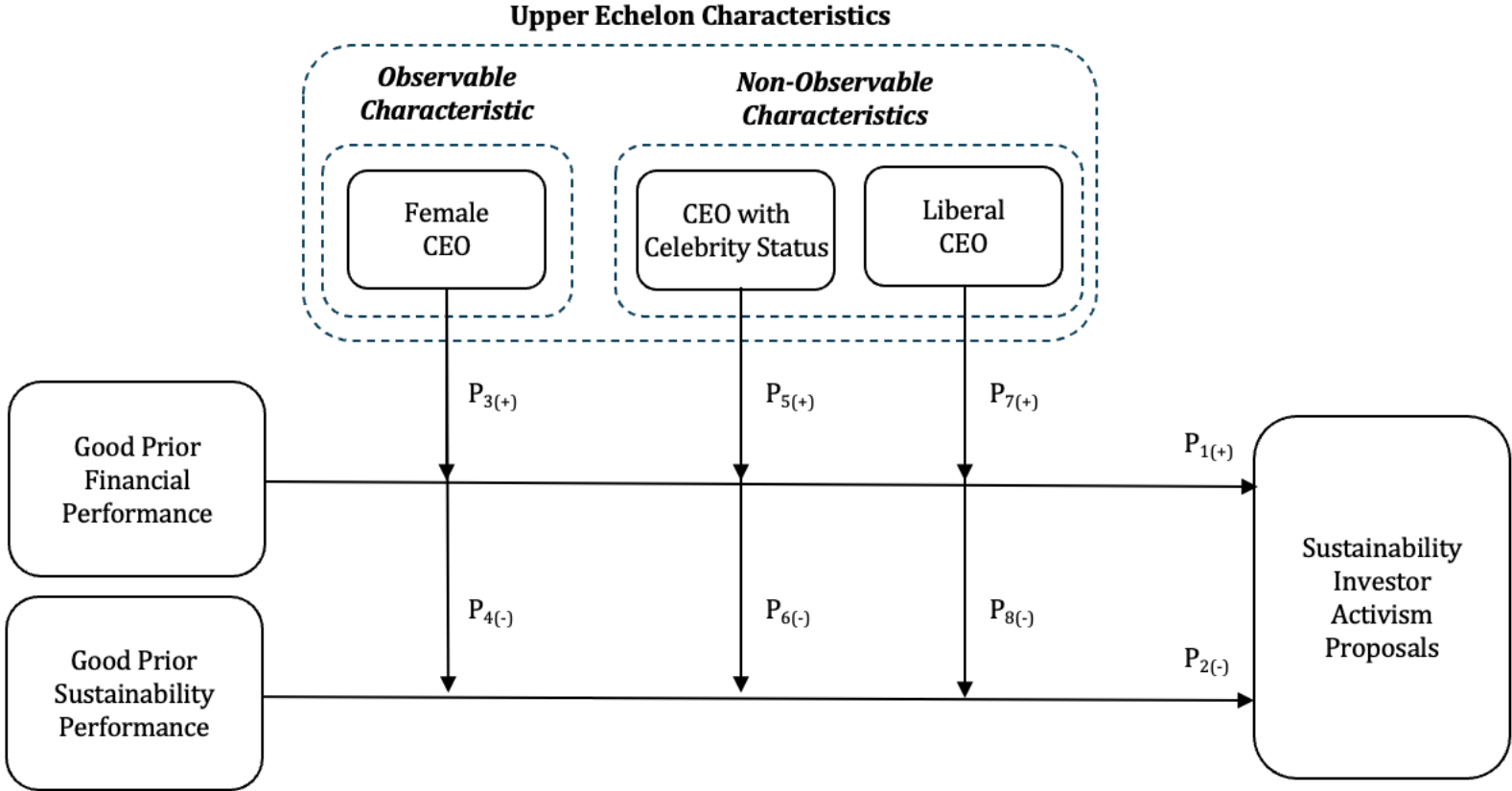
Mungai, Ndiritu, and Rajwani 2020), the CSO (Fu, Tang, and Chen 2020; Kanashiro and Rivera 2019) or the Chief Officer of CSR (Wiengarten, Lo and Lam 2017) and their sustainability impact or performance impact. At the same time, others have studied the sustainability impact of CEO characteristics, such as age, tenure, education (Lewis, Walls, and Dowell 2014; Lee, Sun, and Moon 2018), research background, financial expertise, foreign exposure, age (Shahab et al. 2020), and extraversion (Hrazdil, Mahmoudian, and Nazari 2021).

We propose a conceptual framework and propositions drawing on extant research, this parsimonious framework is presented in Figure 1. We chose these CEO characteristics because they are directly related to a firm's sustainability performance. Female CEOs are more effective than their male counterparts in leading sustainability efforts (Bannò, Filippi, and Trento 2023; Kiefner, Mohr, and Schumacher 2022). CEOs with celebrity status worry about sustainability as it impacts their image (Lee et al. 2020). When compared to conservative CEOs, liberal ones are more engaged with the sustainability agenda (Chin, Hambrick and Treviño 2013).

TABLE 1
Contribution of this paper

Reference	Leaders	Main effects	Moderators	Mediators	Performance	Period	Key Findings
Ahn (2022)	-	- Industry experience - Functional experience - Firm experience - Social ties	-	- Attention Breadth	- Sustainability performance	2006 to 2008	- The influence of social ties and career experience on sustainability performance is indirect, through the mediator of attention breadth.
Lee, Sun, and Moon (2018)	- CEO	- CEO age - CEO tenure - CEO education	- Organizational size	-	- CSR activities - CSR executions	1999 to 2012	- High CEO age and high CEO education results in fewer CSR activities. - Higher tenure CEO perform more CSR activities.
Shahab et al. (2020)	- CEO	- CEO research background - CEO financial expertise - CEO foreign exposure - CEO age	-	-	- Sustainable performance - Environmental performance - Environmental reporting	2010 to 2017	- CEOs with research background improve sustainable performance. - CEOs with financial expertise increase sustainable performance and environmental reporting. - CEOs with foreign exposure enhance sustainable and environmental performance. - Young CEOs reduce both sustainable and environmental performance.
Fu, Tang, and Chen (2020)	- CSO	- CSO presence	- Presence of a sustainability committee on the board	-	- Firm engagement in socially responsible activities	2005 to 2014	- CSO presence generates more engagement in CSR activities and less in CSiR activities. - The decrease in CSiR is greater than the increase in CSR, so the effect is asymmetrical.
Kanashiro and Rivera (2019)	- CSO	- CSO presence	- Environmental regulatory pressure	-	- Environmental performance	2006 to 2011	- The existence of a CSO leads to higher levels of pollution emissions. - In the presence of strict environmental regulations, CSO presence positively influences firm environmental performance.
Vesal, Siahtiri, and O'Cass (2022)	- CEO - Senior Managers	- Innovation Ambidexterity	- CEO's relative pro-environmental leadership - Senior managers' environmental attitudes	- Environmental Sustainability	- Production Cost Efficiency	-	- High levels of radical and incremental innovation enhances environmental sustainability practices. - Those practices improve manufacturers' production cost efficiency.
Dhir et al. (2023)	- TMT	- University-industry collaboration - TMT diversity	- Transformational leadership	- TMT ambidextrous learning	- Sustainable business model innovation	-	- TMT ambidextrous learning positively affects firm's decision to adopt SBMs. - TMT diversity and university-industry collaboration positively affects ambidextrous learning by TMT and the adoption of SBMs.
Hrazdil, Mahmoudian, and Nazari (2021)	- CEO	- CEO extraversion	-	-	- CSR performance	2008 to 2016	- Extraverted CEOs lead firms to experience higher environmental and social performance.
Sancha et al. (2023)	-	- Governance	-	- Social OM practice - Environmental OM practices	- Social performance - Environmental performance	2008 and 2010	- Governance influences the adoption of social and environmental OM practices. - Social and environmental OM practices are necessary to guarantee social and environmental performance improvements.
Wiengarten, Lo and Lam (2017)	- CCSRO	- CCSRO gender - CCSRO functional background in CSR - CCSRO as a new position - Outsider CCSRO	-	-	- ROA	2004 to 2012	- Female CCSRO have a positive effect on performance. - CCSRO with a CSR functional background have a positive impact on performance.
Huang et al. (2022)	- TMT	- TMT stability	- CEO power	-	- Firm engagement in sustainable CSR	2009 to 2017	- Stable TMT engages in sustainable CSR. - This effect is pronounced only for firms with weak CEO power.
Mungai, Ndiritu, and Rajwani (2020)	- Board - TMT	- Board gender diversity - TMT gender diversity - Experience of women in the TMT	-	-	- Likelihood of ISO 14001 adoption	2019	- Female presence on boards increases the probability of adoption of ISO 14001. - Female presence on TMTs reduce the probability of adoption of ISO 14001.

FIGURE 1
Conceptual Framework



3.4 Impact of Prior Firm Performance, Prior Sustainability Performance, and Contingent Effect of CEO Characteristics

Firms are increasingly integrating sustainability goals with financial goals, because rather than competing they are complementary, considering that achieving sustainability also enhances profits and growth (Vadakkepatt et al. 2021). Consequently, sustainability performance and firm performance are closely related. Investors target firms that are capable of meeting their demands. Poor performing firms have fewer financial resources available, so they will be less able to invest in sustainability initiatives (Hoppmann, Sakhel and Richert 2018; Lepoutre and Heene 2006). Consequently, there is no point targeting them, considering they will not have the ability to meet investors' demands. Additionally, socially driven activism targets profitable firms (Judge, Gaur, and Muller-Kahle 2010). Therefore, it has been established that firms with good prior performance will attract activism related to sustainability. However, for this kind of activism that is aimed at improving sustainability outcomes, it seems reasonable that prior sustainability performance might also be important. Activist investors target firms that have poor prior sustainability performance (Grewal, Serafeim, and Yoon 2016). Therefore, we posit that firms with good prior sustainability performance will make greater investments in future sustainability projects and, consequently, attract less sustainability investor activism proposals.

P1: Good prior financial performance increases sustainability investor activism proposals.

P2: Good prior sustainability performance decreases sustainability investor activism proposals.

UET posits that TMT characteristics influence how firms are perceived by stakeholders (Recendes et al. 2023). More specifically, the traits and behaviors of CEOs can have a substantial

impact on a firm's overall performance, including its sustainability performance (Shahab et al. 2020; Hrazdil, Mahmoudian, and Nazari 2021). Therefore, activist investors will target firms that are able to improve their sustainability performance and will identify them based on CEO characteristics. We focus on three important ones: CEO gender, CEO celebrity status and CEO political view.

Previous research has shown that female CEOs are more targeted in investor activism campaigns in general (Cowen, Montgomery, and Shropshire 2022; Gupta et al. 2018). We argue that in investor activism proposals related to sustainability, in particular, women are more targeted, for several reasons. First, sustainability is perceived as feminine since women are more prosocial, altruistic, and empathetic; as a result, women are more likely than men to embrace environmental and social activities and behaviors (Brough et al. 2016). Second, studies have shown that women leaders are more effective in pursuing the sustainability agenda (Bannò, Filippi, and Trento 2023; Kiefner, Mohr, and Schumacher 2022) since women are more long-term oriented and stakeholder focused (Glass, Cook, and Ingersoll 2016). Third, female CEOs are more likely to invest in corporate social responsibility (Borghesi, Houston, and Naranjo 2014) as women are more rewarded for being caring and concerned for others (Glass, Cook, and Ingersoll 2016; Gilligan 1982). Finally, they are more prone to empower women on the board to drive the implementation of environmental initiatives (Birindelli, Iannuzzi, and Savioli 2019).

P3: The presence of a female CEO amplifies the positive effect of good prior financial performance on the probability of a firm attracting sustainability activism proposals.

P4: The presence of a female CEO reduces the negative effect of good prior sustainability performance on the probability of a firm attracting sustainability activism proposals.

A CEO has celebrity status when it is certified in a contest (Wade et al. 2006), when journalists broadcast that the positive performance of a firm is a direct result of their actions (Hayward, Rindova, and Pollock 2004), or when their peers confer on them a unique form of status (Cho et al. 2016). CEO celebrity status is a source of motivation for those leaders to engage in a viable, legitimate, and effective impression management tactic to preserve their reputation with stakeholders: engaging with sustainability (Lee et al. 2020). Additionally, leadership for sustainability requires leaders with extraordinary abilities (Metcalf and Benn 2013). Showing this will make stakeholders value those leaders even more and, in turn, will help CEOs maintain their celebrity status. Moreover, celebrity CEOs attract more attention from the media for everything they are involved in, which would make them good targets for activist investors since having media attention directed to their proposals might make them priorities to firms. Consequently, firms with celebrity CEOs are more concerned with sustainability and attract more media, therefore, attract more investor attention, so those firms might invite a higher number of sustainability investor activism proposals.

P5: The presence of a CEO with greater celebrity status amplifies the positive effect of good prior financial performance on the probability of a firm attracting sustainability activism proposals.

P6: The presence of a CEO with greater celebrity status reduces the negative effect of good prior sustainability performance on the probability of a firm attracting sustainability activism proposals.

CEO political view might influence their decisions concerning sustainability. Liberals and conservatives have different sets of moral foundations (Graham, Haidt, and Nosek, 2009). Also, CEOs political ideologies reflect their values (Goren, Federico, and Kittilson 2009). UET

posits that due to bounded rationality, CEOs make choices using their individualized lenses that are formed by experiences and values (Hambrick and Mason 1984). As a result, liberal CEOs, when compared to conservative ones, exhibit greater advances in the sustainability agenda (Chin, Hambrick and Treviño 2013). Also, CEO political view might invite investor activism (Briscoe, Chin, and Hambrick 2014). Therefore, it is likely that activist investors concerned with sustainability will be more inclined to target liberal CEOs in their activism proposals.

P7: The presence of a more liberal CEO amplifies the positive effect of good prior financial performance on the probability of a firm attracting sustainability activism proposals.

P8: The presence of a more liberal CEO reduces the negative effect of good prior sustainability performance on the probability of a firm attracting sustainability activism proposals.

3.5 Discussion

Investors are increasingly mindful of sustainability, and an important way in which they gain firms' attention to produce change is through investor activism proposals related to sustainability (Back and Colombo 2022; Yang, Uysal, and Taylor 2018). This study contributes to the literature and practice by unveiling prior financial and sustainability performance as the main drivers of those proposals and shedding light on how CEO characteristics moderate these effects. Our contributions to strategy and UET are four-folded.

First, we reveal the antecedents of sustainability investor activism proposals: prior financial and sustainability performance. Ultimately, investors will choose to target firms that can make the proposed changes related to sustainability. Firms that are underperforming financially have limited resources available to allocate toward sustainability initiatives

(Hoppmann, Sakhel and Richert 2018; Lepoutre and Heene 2006), making them less attractive targets for activist investors. Moreover, those investors will want to target firms that have poor sustainability performance since their objective is to make a change in those firms (Grewal, Serafeim, and Yoon 2016).

Second, we examine how CEO gender moderates the effects of these antecedents. This is attributed to a combination of factors: female CEO's personality traits (Brough et al. 2016), her greater effectiveness in leading the sustainability agenda (Bannò, Filippi, and Trento 2023; Kiefner, Mohr, and Schumacher 2022), her stronger propensity to invest in sustainability (Borghesi, Houston, and Naranjo 2014), and her likelihood of encouraging board members to implement environmental initiatives (Birindelli, Iannuzzi, and Savioli 2019).

Third, we explore the role of CEO celebrity status as a contingent factor shaping the main relationships. That is because these CEOs have a heightened incentive to protect their reputations. Engaging in sustainability initiatives serves as a strategic response to growing stakeholder expectations and societal norms, safeguarding their reputation (Lee et al. 2020). Additionally, the media follows the actions of celebrities, which makes investors want to target them, considering that all this attention might lead to actions to implement the proposed changes. Consequently, firms that have a CEO with greater celebrity status are likely to attract a greater number of sustainability investor activism proposals.

Finally, we consider how political orientation conditions the direct effects. They impact how CEOs make decisions, because they are a consequence of the executives' values (Goren, Federico, and Kittilson 2009). Those political views can attract activist investors (Briscoe, Chin, and Hambrick 2014). In this context, liberal CEOs tend to place a greater emphasis on sustainability and exert more effort to advance this agenda when compared to conservative CEOs

(Chin, Hambrick and Treviño 2013). Therefore, liberal CEOs are more likely to be targeted than conservative CEOs in sustainability investor activism proposals.

3.6 Future Research

This study is theoretical; but in the future we aim to further develop it by finding empirical support. To accomplish this, we intent to collect data on sustainability investor activism proposals in the United States from the last 10 years to identify the target firms. A possible data source for that could be Capital IQ. Next, it will be necessary to gather data for the independent variables. One option would be using Tobin's Q as a measure of prior financial performance and the MSCI database to measure prior sustainability performance.

After that, finding data sources for the moderators will be our next step. CEO gender data could be gathered using Execucomp, and if there is missing data, using AI to complete the database could work. CEO celebrity status data could be collected from social media. Either X or LinkedIn could an option. CEO political view could be measured using donations data from the U.S. Federal Election Commission (FEC) database to infer if the CEO is liberal or conservative.

Control variables would be important to include to improve the non-observable issue and improve the identification of the estimated models. Some options are the type of proposal, the type of investor, industry, firm size, firm age, ROA, ROE, CEO age, CEO tenure, CEO educational level, CEO sustainability experience, and others. With this panel data, it would be possible to run the models and empirically support the findings.

Moreover, other authors could pursue alternative possible avenues such as comparing firms targeted by sustainability investor activism proposals with those not targeted, examining not only CEO characteristics but also the traits of other TMT members. Additionally, exploring a different contextual setting, such as varying national or cultural environments, could provide

valuable insights, as investors' engagement with sustainability may differ across countries. This would allow for a deeper understanding of how cross-cultural factors and governance structures influence the dynamics of sustainability activism.

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