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Leading corporate sustainability: The role of top management team composition for triple bottom line performance

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Abstract

Sustainable development at the corporate level requires balancing social, environmental, and financial performance goals. Achieving such “triple bottom line” (TBL) performance is a very challenging task. In this study, we explore the role the organization's top management team (TMT) plays in leading their organization towards corporate sustainability. We focus on how two distinct aspects of the TMT's structural composition—the presence of a “chief sustainability officer” (CSO) and the TMT's functional diversity—affect the organization's ability to reach high levels of TBL performance. We follow the presence of 22 global energy companies in Corporate Knight's “Global 100” sustainability index for a period of 11 years and find that, surprisingly, the presence of a CSO does not boost TBL performance. However, we do find a positive effect for TMT functional diversity, suggesting that more diverse TMTs are better able to lead their organization to higher levels of TBL performance.

KEYWORDS

chief sustainability officer, corporate sustainability, sustainable development, TMT diversity, top management team, triple bottom line performance

1 | INTRODUCTION

Corporate sustainability—referring to organizations' efforts to balance social, economic, and environmental goals—has become a fashionable topic in management research and practice in the last decades. Based on an integrative perspective on corporate sustainability (Hahn, Pinkse, Preuss, & Figge, 2015; Van der Byl & Slawinski, 2015), the common assumption nowadays is that organizations can—and should—balance these three goals rather than prioritize one over the others. However, the simultaneous pursuit of the three goals is fraught with trade-offs and tensions (Hahn, Figge, Pinkse, & Preuss, 2010), and many organizations fail to reach high levels of the so-called “triple bottom line” (TBL) performance—that is, high scores on all three dimensions of financial, environmental, and social performance (Elkington, 1998).

Although previous research has extensively described the trade-offs and tensions inherent in corporate sustainability (e.g. Hahn

et al., 2010; Hahn, Preuss, Pinkse, & Figge, 2014), less attention has been paid to *how* organizations can actually deal with them (Beckmann, Hielscher, & Pies, 2014; Van der Byl & Slawinski, 2015). As McWilliams et al. (2016: 194) point out, the management literature so far has “not offered much practical guidance for managing the triple bottom line.” We aim to fill this gap by assessing the role of corporate governance and in particular the organization's top management team (TMT). Prior research has repeatedly suggested that organizations' leaders—their TMTs—play an important part in leading their organization towards TBL performance (e.g., Walker, Ni, & Dyck, 2015) as they can act as “a catalyst” (Tang, Walsh, Lerner, Fitza, & Li, 2018). More generally, research on coping with strategic challenges (such as those involved in TBL performance) emphasizes a set of specific managerial capabilities that are important in this context, including the ability of dynamic decision-making and acknowledging contradiction (Hahn et al., 2015; Kaptein & Wempe, 2002; Smith, 2014; Turner, Swart, &

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Maylor, 2013). In our study, we integrate this repeated emphasis on managerial capabilities with Hambrick and Mason's (1984) Upper Echelons (UE) theory—which proposes that the organization's strategic choices and behavior are influenced by the *composition* of the organization's TMT. We build on a recent trend in UE research to focus on the TMT's structural configuration (Hambrick, Humphrey, & Gupta, 2015; Jones & Cannella, 2011; Menz, 2012; Nuscheler, Engelen, & Zahra, 2018), by proposing that the fundamental choices made in structuring the TMT will affect its capability to understand and deal with the challenges proceeding from pursuing TBL performance.

We focus on two distinct characteristics, both related to a key structural feature within TMTs: their configuration in terms of *functional* roles (Beckman & Burton, 2008; Hambrick et al., 2015; Menz, 2012). First of all, in line with Menz's (2012) call for more research on the impact of individual functional roles in the TMT, we assess the *presence of a chief sustainability officer* (CSO). The CSO represents a TMT member with a functional dedication to and core responsibility for corporate sustainability efforts (Strand, 2013, 2014). As this senior executive is specifically hired to promote attendance to sustainability issues, we expect that his/her presence will improve the TMT's ability to lead the organization towards higher levels of TBL performance. Second, previous research has found that *diversity in the functional positions within the TMT* increases the pool of nonredundant knowledge, skills, and perspectives (Bantel & Jackson, 1989; Díaz-Fernández, González-Rodríguez, & Simonetti, 2015; Williams & O'Reilly, 1998), that it stimulates fruitful debate (Olson, Parayitam, & Bao, 2007), and that it facilitates strategic change (Naranjo-Gil & Hartmann, 2007). Based on these findings, we anticipate that functional diversity will enhance the TMT's effectiveness in pursuing TBL performance.

We empirically assess these expectations by exploring the rankings of a sample of leading energy companies in the annual "Global 100" index, composed by Corporate Knights Inc., a Canadian research institute specialized in evaluating TBL performance. We chose a methodology that assesses TBL performance as a whole, rather than either one of the three dimensions separately, because our focus is exactly on the impact of the TMT's composition on *overall* TBL performance—that is, on its role in overcoming its inherent trade-offs and challenges. Such a focus would be lost if we would assess the performance dimensions separately. Moreover, our method is based on TBL performance that goes beyond reporting practices only. In this manner, we account for the often-heard criticism that merely assessing reporting practices does not equal the assessment of corporate sustainability (Milne & Gray, 2013). Our results partially support our predictions: We find no effect of the presence of a CSO, but we do find that TMT functional diversity positively affects TBL performance, as expressed in both organizations' presence in the Global 100 index and their ranking height.

Our work contributes to two but interrelated discourses: As for research on corporate sustainability, we add to the debate how corporate governance might contribute in dealing with its trade-offs (Bansal & DesJardine, 2014; Beckmann et al., 2014; Hahn et al., 2010). Although existing work in this context has predominantly focused on conceptually depicting these trade-offs, we contribute by empirically validating the role of the TMT and its composition. Moreover,

although the extant body of work has focused on the role of either the organization's board of directors (e.g., Galbreath, 2018; Jizi, 2017; Li et al., 2017) or individual chief officers in corporate sustainability (e.g., Petrenko, Aime, Ridge, & Hill, 2016; Strand, 2013, 2014), we show that the whole TMT matters—that is, functionally diverse TMTs appear to be better equipped to lead their organizations to TBL success. Second, we contribute to the recent trend in UE literature that focuses on *structural* aspects of the TMT (e.g., Hambrick et al., 2015). Our findings suggest that, at least for our sample of TBL leaders, the mere presence of a CSO does not add substantial value in terms of TBL performance, but diversity in functional positions does pay off. Although previous scholars have already connected TMT functional diversity to financial performance (Buyl, Boone, Hendriks, & Matthyssens, 2011; Certo, Lester, Dalton, & Dalton, 2006; Díaz-Fernández et al., 2015), to our knowledge, this is the first study to explore its impact on TBL performance.

2 | THEORETICAL FRAMEWORK

2.1 | Corporate sustainability and managerial capabilities

Corporate sustainability refers to how effectively organizations balance the dimensions of financial, social, and environmental performance. Although these three dimensions in isolation might be manageable, their simultaneous pursuit results in several challenges and tensions for organizations (Epstein, Buhovac, & Yuthas, 2015; Hahn et al., 2015; McWilliams et al., 2016). Studies on strategic challenges and tensions, both in the field of corporate sustainability and in other domains, have highlighted the crucial role of managerial capabilities in this matter (Birkinshaw, Crilly, Bouquet, & Lee, 2016; Kaptein & Wempe, 2002; Smith, 2014; Smith & Tushman, 2005; Turner et al., 2013; Walker et al., 2015). More precisely, scholars have identified four crucial managerial skills: the ability to (a) *acknowledge contradiction*, (b) *value interconnections between different strategic domains*, (c) *engage in and manage task conflict*, and (d) *intrinsically motivate middle managers*.

The first managerial capability, *acknowledging contradiction*, refers to the TMT's ability to embrace rather than avoid competing strategic orientations (Hahn et al., 2014; Smith & Tushman, 2005). This process of paradoxical thinking requires high levels of cognitive complexity (Carmeli & Halevi, 2009) and the ability to constantly shift between varying perspectives (Smith & Tushman, 2005). Hence, it requires "behavioral differentiation"—that is, the ability to switch between different goals flexibly, depending on the situation that is most salient (Carmeli & Halevi, 2009; Hooijberg, Hunt, & Dodge, 1997). In the context of pursuing TBL performance, which requires constant shifting between different strategic interests of economic, social, and environmental nature (McWilliams et al., 2016), high levels of "behavioral differentiation" should thus benefit the TMT.

A second and interrelated managerial capability is what Smith (2014) calls the ability to *value interconnections between different strategic domains*. Thus, it is not sufficient for organizational leaders to be able to acknowledge contradiction and to switch between different

strategic interests, but they should also be capable to find synergies between them. More specifically, in the context of TBL performance, this pertains to the integration of its three areas—financial, environmental, and social—and the effective adherence to a combination of different performance goals that can transform the trade-offs and tensions into win–win outcomes (Beckmann et al., 2014). TBL performance measures are highly context-dependent and often challenging to fully comprehend (Searcy, 2012), which makes it difficult for organizational leaders to be sufficiently familiar with the specific content of all three types of performance measures to recognize their synergies (Beckmann et al., 2014).

Third, Smith, Binns, and Tushman (2010) emphasize the capability to *engage in and manage task conflict* as a capability necessary to cope with tensions. Task conflict—that is, diverging viewpoints about the team's task (de Wit, Greer, & Jehn, 2012)—has been shown to lead to a more critical evaluation of the project at hand and decreased chances of groupthink and inertial processes to occur (de Wit et al., 2012; Hambrick & Mason, 1984). Managing such conflicts and, hence, ensuring that their benefits—but not their potentially disruptive effects—can be reaped are thus another essential managerial capabilities.

Finally, the ability to *intrinsically motivate middle managers*—and by extension, the whole organization—to operate within a framework of simultaneous diverging strategic goals is crucial. Both research on the TMT-middle management interface (Raes, Heijltjes, Glunk, & Roe, 2011) and strategic tensions research (Birkinshaw et al., 2016; Strand, 2013) has shown that an important part of successful strategy implementation resides in the interaction between different organizational actors.

In conclusion, we expect that the presence of these four managerial capabilities will help organizations to reach higher levels of TBL performance. Building on the UE theory (Hambrick & Mason, 1984), we further argue that such managerial capabilities reflect who constitutes the organization's dominant coalition—that is, of the composition of the TMT. More specifically, TMTs vary in how they are fundamentally structured (Hambrick et al., 2015; Nuscheler et al., 2018), and we argue that TMTs' structural configuration will affect the organization's capacity to deal with the challenges and trade-offs related to TBL performance. In particular, we propose two ways in which organizations can address corporate sustainability challenges in terms of the functionally composing their TMT: (a) by appointing a CSO and (b) by ensuring sufficient functional diversity within the TMT. Below, we argue how both structural features affect the four abovementioned managerial capabilities and, hence, TBL performance.

2.2 | Presence of a CSO

A first strategy to confront the challenges of TBL performance at the TMT level is to appoint a CSO, denoting a TMT member whose job is specifically dedicated to corporate sustainability efforts. Scholars have emphasized that the appointment of (non-CEO) executives generally aligns with the organization's strategic interests (e.g., Buyl, Boone, & Wade, 2015; Greve, Nielsen, & Ruigrok, 2009). More generally, organizations have been reported to add C-level officers next to the traditional core of the TMT—CEO, CFO, COO—to deal with increasing

(institutional) complexity (Svejenova & Alvarez, 2016). This suggests that the appointment of a CSO represents the organization's dedication to sustainability matters. Previous research indeed found a positive association of the presence of such an officer with the organization's environmental performance (Kanashiro & Rivera, 2017) and with the organization's presence in the Dow Jones Sustainability Index (Strand, 2013). Strand (2013) explains this by arguing that once an organization devotes substantial resources—that is, an officer—to sustainability efforts, this usually implies genuine care for sustainability matters and interest to integrate multiple performance goals.

Hence, the presence of such an officer might represent a signal that the organization is committed to achieve corporate sustainability efforts (Risi & Wickert, 2017). Moreover, as these officers are specifically assigned to this task, CSOs should be specialized in working with the challenges and tensions inherent in corporate sustainability and consequently be able to make better informed decisions (Ashmos & McDaniel, 1996) and help the firm manage diverging stakeholder relations (Wiengarten, Lo, & Lam, 2017). As argued by Lubin and Esty (2010: 47), “a chief sustainability officer helps the CEO and executive team visualize goals and professionalize the process of aligning vision with business strategy. That means redefining performance expectations, specifying accountability, tracking results, and rewarding success.”

The presence of a CSO can be linked to the four managerial capabilities identified above. First, CSOs are generally introduced in the TMT to put sustainability issues on the strategic agenda (Lubin & Esty, 2010; Strand, 2013). The introduction of such a nontraditional role in itself infuses paradoxical perspectives and cognitive frames into the TMT by “simply asking questions that otherwise would not have been asked by the traditional members of the TMT” (Strand, 2014: 700). In the same way, by asking such questions and proposing nontraditional issues, the presence of a CSO can engender productive task conflict (Carpenter, 2002; Strand, 2014). Strand (2014: 700) further argues that the introduction of a CSO usually goes hand in hand with the “installation of bureaucratic machinery within the corporation to support the corporate sustainability and CSR efforts.” On the one hand, such an installation, and the associated formal internal procedures (Weber, 1978), warrants the interconnectedness of social and environmental goals with the organization's traditional—for example, financial—goals. On the other hand, it also allows the dissemination of sustainability-related ideas throughout the whole organization and, hence, it incentivizes middle managers to champion initiatives related to sustainability (Lubin & Esty, 2010; Raes et al., 2011; Strand, 2014). Consequently, we expect that the inclusion of a CSO in the TMT will have a positive effect on the organization's overall TBL performance. Following this line of reasoning, we hypothesize:

Hypothesis 1. *The presence of a CSO in the TMT is positively related to organizational TBL performance.*

2.3 | TMT functional diversity and corporate sustainability tensions

Besides by adding a specific function—CSO—to the TMT, TMTs can also attempt to cope with the challenges proceeding from pursuing

TBL performance by adapting the functional configuration of the TMT as a whole. We specifically focus on TMT *functional diversity*, which reflects the variety in TMT members' functional positions (Beckman & Burton, 2008). Prior UE research has found that TMT functional diversity is generally beneficial for organizations, leading for instance to higher levels of innovation (Bantel & Jackson, 1989; Talke, Salomo, & Kock, 2011) and financial performance (Buyl et al., 2011). UE scholars have explained these findings by arguing that functionally diverse TMTs have larger pool of skills, abilities, and perspectives at their disposal that enhance information processing (Bantel & Jackson, 1989; Buyl et al., 2011; Díaz-Fernández et al., 2015), that their large variety of network contacts provides them with nonredundant knowledge and unique information (Naranjo-Gil, Hartmann, & Maas, 2008; Nuscheler et al., 2018; Williams & O'Reilly, 1998), and that they experience higher levels of (productive) task conflict and debate (Hambrick & Mason, 1984; Simons, Pelled, & Smith, 1999).

These general advantages of TMT functional diversity identified in prior research should be especially relevant for the management of the challenges surrounding TBL performance, as they can be linked to the four managerial capabilities identified above. First, TMT functional diversity has been associated with cognitive complexity (Bantel & Jackson, 1989; Carmeli & Halevi, 2009; Hambrick & Mason, 1984), increasing the TMT's ability to acknowledge contradiction. For instance, Olson et al. (2007: 200) propose that such cognitive diversity, by its very nature, "should generate multiple perspectives, thought-out alternatives and ultimately lead to better decisions." Second, the availability of increased cognitive capacity and multiple perspectives in more diverse TMTs also enhances both the process of understanding this new information and the interconnections between the different corporate sustainability domains. In this respect, Tekleab, Karaca, Quigley, and Tsang (2016) argue that at high levels of functional diversity, team members will respect each other's differences and use them to their benefit.

Third, TMT functional diversity has been found to lead to more task conflict (Simons et al., 1999). Indeed, the variety of expertise and cognitive differences cause "clashes" of multiple perspectives and interpretations (Olson et al., 2007) and increased elaboration of task-related information (Wei & Wu, 2013). In the context of TBL performance, where senior leaders are constantly expected to juxtapose and evaluate different interests, we expect functional diversity to lead to useful task conflicts within TMTs. Finally, we also expect functionally diverse TMTs to be better able to motivate middle managers. In a sample of 92 TMTs of Spanish hospitals, Naranjo-Gil et al. (2008) showed that heterogeneous TMTs mitigated some of the downsides of strategic change such as employee resentment and work floor chaos. These authors explain this by arguing that if the TMT is more diverse, they represent a wider set of social categories, and they will hold more extensive formal and informal intra-organizational network ties. As a result, middle managers and lower-level employees are more likely to identify and sympathize with heterogeneous TMTs and, consequently, accept strategic changes and action plans proposed by such heterogeneous TMTs. In a similar vein, due to a larger variety in backgrounds, we expect functionally diverse TMTs to be better at appealing to and interacting with a broad

pool of employees, which facilitates the change processes that come with TBL strategy implementation.

Taking everything together, we expect TMT functional diversity to increase TBL performance. Our second hypothesis runs as follows:

Hypothesis 2. *TMT functional diversity is positively related to organizational TBL performance.*

3 | METHODS

3.1 | Sample and data

We tested our hypotheses using a dataset composed of industry TBL leaders—that is, corporations that were listed at least once between 2005 and 2015 in the annual "Global 100" index published by Corporate Knights, a Canadian Research agency specialized on corporate sustainability research. Organizations' ranking on this index is based on their performance within the three domains of financial, environmental, and social performance, which together constitute the three pillars of TBL performance. As Corporate Knights consistently discloses its ranking methodology, the "Global 100" index is useful for purposes of academic research.

Research on the validity of sustainability indices has produced diverging findings with regard to measurement reliability across industries (Chen, Zeng, Lin, & Ma, 2017; Semenova & Hassel, 2015). As the "Global 100" index lists firms from various industries, we selected one industry for which TBL is and will remain a salient issue, namely, the energy industry (Pätäri, Arminen, Tuppurä, & Jantunen, 2014). For all energy companies that appeared at least once on the "Global 100" list over the timespan 2005–2015, we manually collected annual reports over the full period of 11 years—hence, also for the years between 2005 and 2015 that the company did not appear on the "Global 100" index. Excluding some observations because of missing variables, this resulted in a final sample of 222 observations, proceeding from 23 unique energy companies. On average, these organizations are 49 years old and comprise about 27,000 employees.

As mentioned above, our sample consists of firms that have shown high TBL performance at least once in the observation period. This provides us with an opportunity to assess the "sustainability of sustainable performers," that is, the variance in TBL performance among industry leaders in this matter. Even though these firms might be considered TBL industry leaders, there was still substantial variation in terms of annual TBL performance. A more detailed description of the sample can be found in Table 1.

3.2 | Measures

3.2.1 | TBL performance

Our dependent variable was obtained from the annual "Global 100" index and operationalized as the organization's *presence in the index*. As this "Global 100" index ranks the 100 best performing companies worldwide across industries with regard to TBL management, the mere presence of a firm can already be considered as a success in

TABLE 1 Sample characteristics

ID	Firm name	Mean size	Mean age	Country	Mean functional diversity score	Mean TMT size	First year in rankings	Years with CSO	Mean ranking height original score
1	BG Group PLC	5578	14	United Kingdom	0.753	10	2009	0	31.8
2	BP PLC	87282	101	United Kingdom	0.827	10	2005	3	2.7
3	Cairn Energy PLC	623	29	United Kingdom	0.584	4	2005	0	2.8
4	Cameco Corp	3285	22	Canada	0.742	7	2016	0	2.9
5	Cenovus Energy Inc.	2957	3	Canada	0.905	9	2013	6	23.3
6	Enbridge Inc.	6186	61	Canada	0.818	10	2005	2	40.2
7	Encana Corporation	4343	8	Canada	0.773	10	2009	4	31.1
8	Eni SpA	74054	57	Italy	0.865	11	2016	1	2.9
9	Galp Energia SGPS SA	6953	12	Portugal	0.805	6	2013	6	16.4
10	Hess Corporation	10609	79	US	0.510	26	2014	0	21.9
11	Neste Oil OYJ	4677	62	Finland	0.850	9	2007	8	27.0
12	Nexen Inc	3769	38	Canada	0.851	12	2008	2	36.4
13	OMV AG	33353	54	Austria	0.802	5	2008	6	15.4
14	Origin Energy Limited	4777	10	Australia	0.809	7	2010	2	15.6
15	Petroleo Brasileiro SA	77157	57	Brazil	0.754	7	2010	0	29.4
16	Repsol SA	36246	23	Spain	0.828	9	2011	2	22.1
17	Royal Dutch Shell PLC	97909	103	Netherlands, the	0.775	7	2005	1	18.1
18	Saipem SpA	38359	53	Italy	0.000	10	2008	0	7.3
19	Schlumberger Limited	85000	82	United States	0.840	15	2005	2	9.6
20	Statoil ASA	26533	38	Norway	0.855	9	2009	6	14.3
21	Suncor Energy Inc.	11216	94	Canada	0.861	11	2010	5	40.0
22	Transcanada Corporation	4202	59	Canada	0.804	8	2007	6	16.1
23	Woodside Petroleum Ltd	3731	58	Australia	0.797	9	2013	0	12.9

Note. CSO: chief sustainability officer; TMT: top management team.

terms of TBL performance. This variable was coded 1 if the organization appeared in the ranking, irrespective of ranking height, and 0 if not.

3.2.2 | TMT functional composition

Following earlier TMT research (Hambrick, Cho, & Chen, 1996), the TMT was defined as the CEO and his/her senior executives. TMT members were defined as those carrying the title “Executive Director” (Europe), “Senior Manager” (US), and/or “Executive Officer” (Canada). Background characteristics of these TMT members were collected by manually checking organizations' annual reports.

The categorization of TMT members' current functional position was based on their functional title, for which we used an existing categorization scheme (Menz, 2012), with the following categories: (a) Accounting/Finance, (b) Administration/Legal, (c) Human Resources, (d) Information Systems/Technology, (e) Marketing, (f) Operations, (g) Research and Development, and (h) Strategy. However, this categorization was slightly altered: First, we added three new functional categories, being (a) General Management, (b) Stakeholder Relations, and (c) Sustainability (for the final list of categories, see Table 2), due to the large amount of job titles in the sample that could be placed in either of the three (respectively, 808, 87, and 85 functions), combined with the fact that job titles specifically focused on sustainability and stakeholder relations play a large role in managing the tensions of TBL management (Hahn et al., 2015; Strand, 2013).

Second, we came across three major functional categories specific to the energy industry that were not part of the original categorization. These pertain to *Upstream*, *Midstream*, and *Downstream*. The Petroleum Services Association of Canada, a national trade association for the petroleum sector, provides the following definitions for these sectors: *Upstream* refers to the search for oil or gas fields, as well as the operations that bring these resources to the surface. This sector was categorized under both *Strategy* and *Operations*. *Midstream* refers to transportation of the petroleum product, and *Downstream* refers to the refining of petroleum crude oil and processing of raw gas (Petroleum Services Association of Canada, 2016). As these latter two activities are predominantly operational, they were categorized under *Operations*.

To be able to categorize all functional titles in the sample, a detailed coding scheme was developed (available upon request). Certain job titles did not allow for categorization right away, as the titles were ambiguous or sector-specific. Decisions on categorization of such titles were made based on descriptions of the TMT members' responsibilities in the annual reports, as well as general job descriptions of these titles. Finally, functional roles that consisted of multiple functional categories were coded under multiple categories, as in the “Exploration & Production” example described above.

Our first independent variable, *presence of a CSO*, was based on the categorization of functions (see Table 2) and was operationalized as a dummy that equaled one if at least one of the TMT members held the functional role “Sustainability.” The second independent variable, *TMT functional diversity*, was calculated using the Blau (1977) diversity

TABLE 2 TMT diversity categorization scheme based on Menz, 2012

Functional Area	TMT members' job titles
1 General Management ^a	Chairman Group Chief Executive Designate Special Advisor
2 Accounting/Finance	Chief Accounting Officer Chief Financial Officer Chief Investment Officer Chief Risk Officer
3 Administration/Legal	Company Secretary General Counsel Chief Administrative Officer Chief Compliance Officer Chief Environmental Officer Chief Ethics Officer Chief Governance Officer Chief Legal Officer
4 Human Resources	Chief of Staff Chief Human Resources Officer Chief Learning Officer Chief People Officer
5 Information Systems/ Technology	Chief Information Officer Chief Software Technology Officer
6 Marketing	Executive Vice President, Global Energy Marketing Chief Brands Officer Chief Commercial Officer Chief Communications Officer Chief Customer Officer Chief Marketing Officer Chief Merchandising Officer Chief Sales Officer Retail Market G&P Oil Retail
7 Operations	Chief Engineering Officer Chief Operating Officer Chief Procurement Officer Chief Quality Officer Chief Supply Chain Officer
8 Research and Development	Chief Innovation Officer Chief Medical Officer Chief Science Officer Chief Technical Officer Chief Technology Officer Chief Development Officer
9 Strategy	Executive Vice President, Exploration Executive Vice President, Production Chief Globalization Officer Chief Growth Officer Chief Integration Officer Chief Planning Officer Chief Strategy Officer
10 Stakeholder Relations ^a	Executive Vice President, Policy and Corporate Affairs Corporate Relations VP, Investor Relations and Communicators Public Affairs Communication Media Relations Government Affairs Communications
11 Sustainability ^a	EVP, Natural Gas Economy Natural Gas Sustainability officer Chief Sustainability Officer Chief Alternative Energy Unconventional Resources Director

Note. TMT: top management team.

^aNot in the original categorization by Menz, 2012, added for the purposes of this research.

index: $1 - \sum p_i^2$, where i stands for any functional category within the TMT. As several members in the sample held a job title that could be categorized under more than one functional area, such as "Chief exploration and sustainability," the total number of functional titles within one TMT did not always equal the number of TMT members.

3.2.3 | Control variables

We controlled for three organizational level variables and two macro level variables that are likely to influence TBL performance. The first firm level variable is *Return on Assets (ROA)*, as previous research has shown a positive relation between an organization's financial and its sustainability performance (Margolis, Elfenbein, & Walsh, 2009). *ROA* was calculated by dividing the firm's net income by total assets in a particular year. Second, *Firm size*, calculated by the number of the organization's employees was controlled for, as commonly done in organizational and TMT functional diversity research (Buyl et al., 2011). To account for this variable's skewed distribution, we applied a logarithmic transformation. Finally, *Firm age* was calculated by subtracting the firm's founding year from the year of observation.

On the macro level, we first controlled for the firm's *Continent of headquarters* (Australia, Europe, North America, and South America), as reporting guidelines for TBL management differ per geographical region (Fifka, 2013). Because the Global 100 ranking methodology is partly based on annual reports, the amount and manner of reporting are likely to influence organizational TBL performance in this ranking. Second, because previous research has found that in the wake of the 2008 global financial crisis, energy companies experienced an increase in stakeholder demands, urging them to strengthen their sustainability reporting (Dilling & Harris, 2018), we included the dummy *After crisis*, which has a value of "1" for the years after 2008.

3.3 | Analysis method

The collected data range from 2005 to 2016—explanatory variables were collected from 2005 to 2015 (t) and dependent variables from 2006 to 2016 ($t + 1$) to account for the fact that changes in TMT composition are not likely to result in immediate changes in the firms' strategic outcomes. We ran logistic panel regressions using a random effects estimation design to account for the panel structure, the serial correlation between firm years, and the binary nature of the dependent variable. A fixed effects design would not be appropriate as the panel length is relatively short and some of the focal variables are quasi constant over time (Cameron & Trivedi, 2010). Moreover, the Hausman test showed a nonsignificant result, implying that a random rather than a fixed effects specification should be preferred.

4 | RESULTS

The variables' means, standard deviations, and correlations are shown in Table 3. Prior to running analyses, the variance inflation factor (VIF) scores were assessed. With a maximum value of 4.06, these scores were far below the cutoff rule of 10 (Cohen, Cohen, West, & Aiken, 2013). Table 4 shows the results of the random effects logistic panel

TABLE 3 Means, standard deviations, and correlations

Measures	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12
<i>Dependent measures t</i>														
1	Presence in the index	0.37	0.48	-										
<i>Explanatory measures $t-1$</i>														
2	TMT functional diversity	0.76	0.20	0.18*	-									
3	Presence of CSO (1 = yes)	0.27	0.44	0.14*	0.31*	-								
<i>Controls $t-1$</i>														
4	ROA	0.12	0.72	0.08	0.05	0.13	-							
5	Firm age	49.19	29.95	0.00	-0.01	-0.04	-0.07	-						
6	Continent -Australia = ref	0.07	0.26	-0.10	0.07	-0.11	-0.02	-0.20*	-					
7	Continent-Europe	0.50	0.50	-0.02	-0.17*	0.02	0.09	0.06	-0.31*	-				
8	Continent-North-America	0.38	0.49	0.09	0.13*	0.10	-0.07	0.02	-0.22*	-0.78*	-			
9	Continent-South-America	0.05	0.21	-0.02	0.00	-0.13	-0.02	0.06	-0.06	-0.21*	-0.15*	-		
10	Firm size	9.36	1.45	-0.07	0.02	-0.07	0.00	0.54*	-0.21*	0.31*	-0.32*	0.27*	-	
<i>Dependent variable additional analyses t</i>														
11	Ranking height	19.88	30.47	0.84*	0.14*	0.12	0.15*	0.00	-0.12	0.11	0.00	-0.11	-0.06	-

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$ (two-tailed).

TABLE 4 Results of logit model-dependent variable: organizations' ranking presence

	Model 1		Model 2		Model 3	
	B	SE	B	SE	B	SE
Constant	-1.18	2.00	-1.22	1.97	-2.89	2.15
ROA	0.37	0.53	0.35	0.51	0.32	0.44
Firm age	0.00	0.01	0.00	0.01	0.00	0.01
Continent-Europe	1.23	1.03	1.16	1.01	1.50	1.00
Continent-North America	1.39	1.02	1.30	1.01	1.41	0.98
Continent-South America	1.17	1.62	1.16	1.59	1.55	1.57
Firm size	-0.16	0.23	-0.15	0.23	-0.24	0.23
After crisis	1.24**	0.36	1.22**	0.36	1.16**	0.36
Presence of CSO			0.26	0.40	-0.03	0.41
TMT functional diversity					2.98**	1.42
Wald Chi ²	13.53*		14.08*		16.63*	
N	225		225		225	
df	7		8		9	

* $p < 0.10$. ** $p < 0.05$. *** $p < 0.01$ (two-tailed).

regression. Model 1 provides estimates for the control variables only and shows that only the *After crisis* dummy has a significant effect ($B = 1.24$, $p < 0.05$). In Model 2, *Presence of CSO* is added. We see that this variable is not a significant predictor, implying that we fail to support Hypothesis 1. Model 3, where *TMT functional diversity* is added, shows that the chances for organizations to be present in the index increase with higher levels of TMT functional diversity ($B = 2.98$, $p < 0.05$). Hence, these results confirm Hypothesis 2.

4.1 | Additional analyses

To further scrutinize these findings, we performed four sets of additional analyses (all analyses are available upon request).

First, we reran the analyses with the firms' ranking height, pertaining to the height of their rank in the "Global 100" index, as an alternative dependent variable to capture TBL performance. These ranks range from 1 to 100, where 1 is the highest rank. We operationalized *Ranking height* by first subtracting the firms' raw rank from 101. Next, these scores were divided by 4.35 (100/23) to transform the original scale to the sample scale. All firms that were not present in the index in a particular year were coded "0." The results of this analysis (GLS panel regression) are in line with our main analysis: They show a significant effect of TMT functional diversity on ranking height ($B = 6.70$, $p < 0.10$), but no significant effect of the presence of a CSO.

Second, in prior research, TMT diversity has been found to positively affect financial performance (see, e.g., Buyl et al., 2011), which could imply that the link between TMT diversity and TBL performance in our results is driven by financial performance, as one of the TBL dimensions. To check for this alternative explanation of our findings, we performed an additional analysis with ROA as a dependent variable. This allows us to see whether our measure of TBL performance is analytically distinguishable from financial performance. This analysis shows no significant results which shows that TBL performance indeed goes above and beyond financial performance and that the effect of TMT diversity on TBL performance is not driven by financial performance.

Third, to control for possible aggregate time effects beyond that of the 2008 global financial crisis, we performed an additional analysis in which we included dummies for all years. This analysis shows very similar results: no significant effect of the presence of a CSO, but a significant positive effect of TMT functional diversity ($B = 2.89$, $p < 0.05$). This implies that aggregate time effects do not influence our main results.

Finally, the presence of a CSO, denoting "the CSR agenda having a seat at the table" (Strand, 2013: 729), has been found to positively affect organizational TBL performance in previous research (Strand, 2013, 2014) but not in our study. A possible explanation could be that organizations might tend to assign a TMT member, potentially even

without any actual functional knowledge, as a “token” CSO to appear responsible to their stakeholders (Strand, 2013, 2014). CSR research has pointed out that this type of behavior is often used as a signaling function for external stakeholders to evoke a sustainable image but does not always imply actual sustainable behavior (Chatterji, Levine, & Toffel, 2009; Delmas, Etzion, & Nairn-Birch, 2013). In a similar vein, Schneider and Meins (2012: 218) describe how organizations sometimes use structural features related to sustainability “as an alibi”—that is, they adopt the structures that are expected by society but, in practice, decouple their actions from these very structures. In this case, the presence of a CSO would thus be a purely symbolical practice of window-dressing, explaining its lack of effects on actual TBL performance (Strand, 2013).

To explore the possibilities of such “token” CSOs being present in the sample, we performed a final additional analysis, in which we categorized CSOs into “token” and “non-token” CSOs. To create these categories, we went with the assumption that TMT members that add the CSO function to another function in the TMT would be ‘token’ CSOs. Put differently, if the CSO also held another position within the TMT (e.g., Chief Marketing Officer or Vice President of Operations) on top of his/her position as a CSO, we assumed that his/her CSO-function was more of a symbolic role, rather than a substantial driver of the organization’s genuine sustainability efforts. This analysis, however, shows us that neither “token” CSOs nor “non-token” CSOs significantly affect TBL performance.

5 | DISCUSSION

The main aim of this study was to assess the extent to which the TMT’s functional structure—and more in particular, the presence of a CSO and the TMT’s functional diversity—contributes to the organization’s ability to pursue TBL performance. The core argument here is that the challenges proceeding from such pursuit require specialized officer attention and/or high TMT functional diversity to be integrated effectively. TBL performance was operationalized in two manners based on Corporate Knights’ Global 100 index: (a) the propensity for firms to be present in the Global 100 index, (b) the firms’ ranking height within the index. As our sample comprises the industry’s “TBL leaders”—that is, those organizations that have demonstrated beneficial TBL performance at least once in the time period 2005–2015—our results should be interpreted in that light. More precisely, they indicate the predictors of doing well among the industry’s best TBL performers. Using this sample, we found no effects for the presence of a CSO. However, we did find that TMT functional diversity positively affects both the chance for organizations to be present in the index and their ranking height.

As for the nonfindings related to the presence of a CSO, we already explored the possibility that this would be driven by “token” CSOs—that is, CSOs that are appointed for purely symbolic reasons—in an additional analysis. Alternatively, organizations might assign a CSO but fail to give him/her the authority and access to resources that would allow him/her to challenge and question the organization’s way of operating (Lubin & Esty, 2010). One of the reasons of this restricted access and authority could be the lack of overall

commitment of the organization to corporate sustainability. Miller and Serafeim (2015) identify three phases in organizations’ commitment to sustainability: compliance (i.e., meeting industry standards), efficiency (i.e., integrating sustainability thinking throughout the organizations mostly because of instrumental reasons), and innovation (i.e., championing radical sustainability initiatives). CSOs’ authority and access to resources—and, hence, their potential impact on TBL performance—increases when an organization shifts from compliance, over efficiency, to innovation (Miller & Serafeim, 2015). Though we have no in-depth information on the phases of sustainability commitment for the organizations in our sample, we would expect them, as leaders in the field of corporate sustainability, to resemble the later phases. Nevertheless, this would imply a high authority and access to resources for CSOs, according to Miller and Serafeim’s reasoning, which seems to be at odds with our findings.

This brings us to a final alternative explanation, inspired by Strand’s (2013, 2014) insights that the inclusion of an explicit sustainability position in the TMT might be a good way for an organization to raise internal (and external) awareness of CSR issues in an initial stage, but that this position becomes redundant after this first period, when the CSR agenda have gained traction in the organization’s strategy. This is illustrated by statements from interviews with executives: “We need to have this [CSO position] for a limited timeframe, to lift the awareness and then lift it into the core of the strategy” (Idar Kreutzer, CEO of Storebrand, in Strand, 2014: 696) and “In a way, I would almost hope that this position would be redundant in five to seven years or something like that because then it would be really part of the whole company’s way of working” (Kersti Strandqvist, CSO of Svenska Cellulosa, in Strand, 2014: 696). In our sample of TBL leaders, this appears to be an especially viable explanation—these organizations might not “need” a CSO (anymore) to direct strategic attention towards sustainability-related issues or to convince the TMT of its importance. This resonates with Risi and Wickert’s (2017) finding that the relative position of sustainability managers shifts from the organizational center to the periphery when sustainability issues become increasingly institutionalized. As a result, the CSO will not significantly affect TBL performance.

For TMT functional diversity we did find results in the expected direction: higher TMT functional diversity was associated with higher TBL performance. We explained this by arguing that functionally diverse TMTs were better able to account for the inherent challenges that many strategy researchers have suggested to come with TBL policies (Hahn et al., 2015; Kaptein & Wempe, 2002; Kleine & Von Hauff, 2009). As little empirical work has been done in this context, a well-defined way to capture these challenges has not been provided yet. Although the methods of operationalization we used in the current study have their methodological drawbacks, they did allow for the assessment of organizational TBL performance as a whole. As TMT functional diversity shows significant, positive effects across the two proxies used in this study, we propose this is a salient factor contributing to the TMT’s ability to cope with the challenges and strategic tensions inherent in TBL management and translate them into positive organizational TBL outcomes. Functional diversity within the TMT thus seems beneficial, perhaps even necessary, for TBL policies to become successfully translated into organizational

strategy formation and subsequent firm outcomes—even for the TBL leaders in our sample.

Previous research on TMT functional diversity has shown that TMT functional diversity positively affects financial performance (e.g., Buyl et al., 2011). As financial performance is one dimension of TBL performance, and as a positive link is in general shown between financial and sustainability performance (Orlitzky, Schmidt, & Rynes, 2003), one might wonder whether financial performance drives our results or whether TBL performance and financial performance are indeed empirically separable constructs. However, we are confident that this is not the case in our results, for two reasons. First, we control for ROA in our main analyses, suggesting that we find a positive effect of TMT diversity on TBL performance while controlling for financial performance. Second, our additional analyses show that in our sample TMT functional diversity does not increase financial performance. This latter finding reconfirms that TBL performance and financial performance are not the same construct, and TBL performance indeed goes above and beyond measuring financial performance only.

A surprising finding in this study's analyses is the fact that only one of our control variables, namely, the *After crisis* dummy, shows a significant impact. The fact that none of the other control variables shows any effect is surprising, as we chose them thoughtfully based on prior research. A large body of research showed how financial performance and organizational size are associated with CSR performance (Margolis et al., 2009), but we did not find such effects. Moreover, the differences in reporting guidelines for TBL performance between continents should theoretically be quite influential as the Global 100 ranking encompasses different continents, with different rules in, for example, disclosure. The finding that none of these measures seemed to matter is thus hard to explain from a theoretical point of view. One potential explanation might lie in the fact that we only include the industry's "top" TBL performers. Our sample is biased towards organizations that have higher than average TBL performance, which might explain the lack of significant effects of the variables that generally are found to determine CSR-related outcomes. To be specific, these control variables might be able to discern between top and bottom TBL performers but not among top TBL performers.

5.1 | Contributions and managerial implications

The results of this study contribute to the extant literature in multiple ways. First, the structural aspects of TMTs were found to affect TBL performance. In this way, we integrate the UE literature with the literature on TBL performance. In the extant TBL research, scholars have repeatedly emphasized the importance of the organization's TMT, in terms of concepts such as managerial attitudes (Fifka, 2013) or TMT commitment and involvement (Walker et al., 2015). We contribute by specifying that the *structural features* of the TMT matter. Although only one of the two proposed structural features turns out to improve TBL performance, we believe the integration looks promising. Moreover, the finding that the presence of a CSO does not automatically lead to enhanced TBL performance is also insightful for governance purposes as it illustrates that effective governance is not achieved

by adding a "token" CSO. More generally, this study contributes to strategic management literature because it adds to the growing stream of literature that connects corporate sustainability to the organization's executives. Where prior work has primarily focused on characteristics of the chief executive officer, such as political ideology (Chin, Hambrick, & Treviño, 2013) and narcissism (Petrenko et al., 2016), we add by demonstrating that the composition of the TMT as a whole matters.

In addition, UE research has been quite consistent in showing a positive effect of TMT functional diversity on a diverse range of strategic outcomes (Bromiley & Rau, 2016; Certo et al., 2006). This study adds to this literature stream by showing that in the case of paradoxical strategic orientations, such as TBL, this is also the case. Sustainability scholars predict that organizational performance metrics are likely to change over the next years, where more value will be assigned to both social and environmental indicators (Pádua & Jabbour, 2015). This also affects TMT diversity research, as this type of multidimensional performance metric is different from previous performance metrics and might call for different behavioral processes than previously studied in TMT research. The current study provides a first step to this type of reasoning by showing that TMT functional diversity indeed contributes to managing multidimensional and conflicting performance measures, as evidenced in an increased TBL performance. We hope that this opens doors for future researchers to further extend this line of reasoning.

5.2 | Limitations and future research

Evidently this study also has its limitations. To start with, an important limitation possibly affecting our statistical results is that, as mentioned above, the sample is not random. The selected firms are by definition firms that, at some point in their lifecycle, have shown high TBL performance. We present this as a study of the "sustainability of sustainable performers," but for a more general view on how TMT composition affects the average organization's TBL performance, another sampling frame will be needed. Moreover, the sample is rather small and concerns one industry, leading to reduced degrees of generalizability of the results. Though we admit that our dataset of 23 companies is relatively small, we want to point out that we cover 222 yearly observations of 638 individual TMT members. Still, broader insights over multiple industries could be obtained by a more extensive dataset.

Second, though we propose the management of strategic tensions and challenges as the general mediating mechanism driving our hypotheses, we were unable to directly test this, because of data limitations. To validate our line of thinking, it is thus highly recommended to scrutinize the underlying mechanisms in future research, for instance, by means of surveys or in-depth case studies. This would also help to further explore some of the alternative explanations we put forward for the surprising nonsignificant effect of the presence of a CSO. In particular, future scholars can assess CSOs, their responsibilities, authority, and access to resources in organizations in different phases of commitment to corporate sustainability, and subsequently these CSOs' capability to manage tensions.

Finally, although the methodology of ranking used by Corporate Knights to develop their "Global 100" index is very transparent that does not imply the methodological validity is undisputed. Content and criterion validity of sustainability scales are much-debated topics (Chatterji et al., 2009; Delmas et al., 2013) for which definite answers have not yet been provided. For future research, it would be interesting to repeat this study using different sustainability rankings and/or across different industries to see whether results converge.

5.3 | Conclusion

In this study, we show that even among TBL leaders, differences in the structure of the TMT are associated with variance in TBL performance. We hope our study inspires future work to more fully understand the impact of the composition of the TMT on organizations' sustainability performance.

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